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SOMERSETSHIRE

Archæological and Natural History Society.

PROCEEDINGS.

1851.

2

The First Volume of the

PROCEEDINGS OF THE SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY, at the General, Quarterly and Annual Meetings, held during the years 1849 and 1850; with the Papers read at the Meetings, &c. &c. and Sixteen Illustrations, can be had of the Publisher or any Bookseller, at 6*s.* 6*d.* sewed, or bound in cloth, 8*s.*

CONTENTS.—PART 1. PROCEEDINGS, &c. First Annual Meeting. President's Address. Secretary's Report. Dr. Buckland's Address. Museum. First Quarterly Meeting. Roman Remains at Coombe St. Nicholas. Ashill and Thurlbeer Churches. Inscription on Church Bell, at Staple Fitzpaine. Second Quarterly Meeting. Anglo-Saxon and Norman Architecture. British Gold Ring Money. Third Quarterly Meeting. St. Peter's Church, Frome. King Alfred's Strategy. Ashen Fagot. Excursion. Roman Remains at Whatley. Letter of Rev. J. Skinner. Museum. Second Annual Meeting. Address of the Bishop of Bath and Wells. Secretary's Report. Treasurer's Report. Marl Pits of Somersetshire. Dr. Markland's Address. Sculptures of Wells Cathedral. Professor Cockerell's Communication. Archdeacon Brymer's Address. Sculptures in St. Cuthbert's Church, Wells. Ancient Frescoes in Netherbury Church, Dorset. Excursion to Glastonbury. Museum. Excursion to Hambdon Hill, and Montacute. Queries relating to the Churches, Archæology, and Botany of Somerset.

PART II. PAPERS. Uphill Old Church, by Rev. F. Warre. Coins from Somersetshire Mints, by Rev. T. F. Dymock. Sculptures in Wellington Church, by Mr. C. E. Giles. Ancient Earthwork at Norton, by Rev. F. Warre. Turbaries between Glaston and the Sea, by Mr. Stradling. Bridgwater High Cross; and Old Bridge, by Mr. W. Baker. Wells Cathedral, by Rev. D. M. Clerk. Sculptures in St. Mary's Church, Taunton; Old Doorway, at Frome; and Nunney Castle, by Mr. C. E. Giles. Glastonbury Abbey, by Rev. F. Warre. Geology of Somerset; and Somersetshire Fauna, by Mr W. Baker. Bird's Eggs found in Somersetshire, by Mr. W. D. Crotch. APPENDIX.

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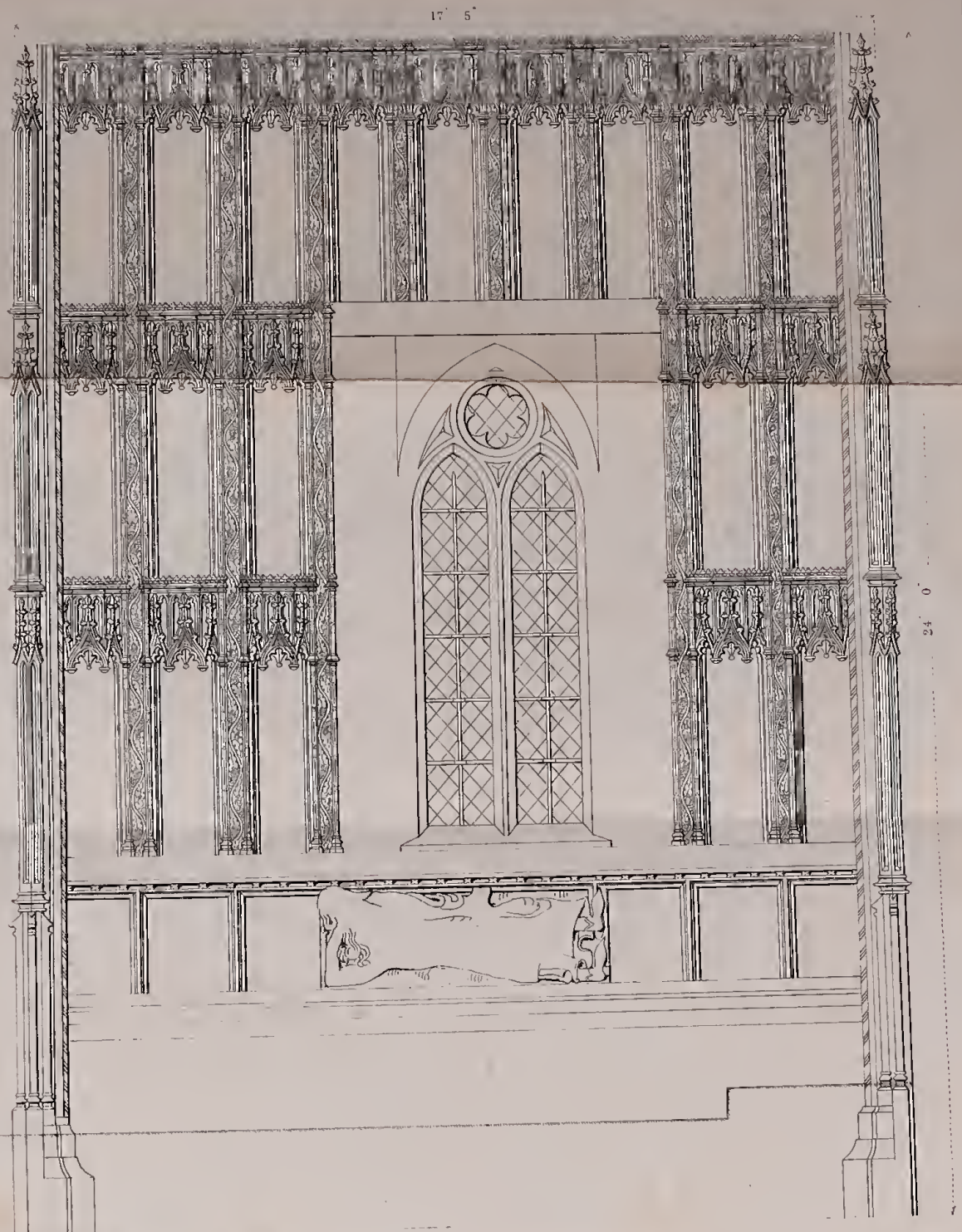

F.T. Dollman, del.

ELEVATION OF REREDOS

AT EAST END OF TANNER'S CHAPEL

ST CUTHBERT'S CHURCH, WELLS, SOMERSET.

SCALE OF 0 1 2 3 4 5 6 7 8 9 10 FEET

F.L.

SOMERSETSHIRE

Archæological and Natural History Society.

PROCEEDINGS

DURING THE YEAR

1851.

V 1 3

TAUNTON:
FREDERICK MAY, HIGH STREET.
LONDON: GEORGE BELL, 186, FLEET STREET.

1852.

The purchase of the Geological Collection of the late Rev. D. Williams having been recommended in the First Volume of the Proceedings, the Committee have great pleasure in informing the Society that a sufficient sum has been subscribed for that purpose, and that the Collection is now deposited in the Museum at Taunton.

The Society is indebted to the courtesy of B. Ferrey, Esq. and E. A. Freeman, Esq. for the illustrations of Wrington Church, and of the Sculptures in St. Cuthbert's Church, Wells, given in the present Volume.

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THIRD ANNUAL MEETING

OF THE

Somersetshire Archæological and Natural History Society,

Held at Weston-super-Mare, September, 16th, 1851.

THOMAS TUTTON KNYFTON, ESQ. HIGH SHERIFF OF THE COUNTY, IN THE CHAIR.

THE business commenced on Tuesday morning at eleven o'clock, when the members assembled in the large and commodious National School Room, which had been kindly placed at the service of the Society by the Ven. Archdeacon Law, rector of the parish.

The Vice-Presidents, Treasurers, general Secretaries, and the district or local Secretaries, were severally re-appointed. The following gentlemen were also elected as Vice-Presidents:—The Rev. J. T. Law, T. T. Knyfton, Esq. Lord Talbot de Malahide, W. H. P. Gore Langton, Esq. M.P. J. H. Smyth Pigott, Esq. and F. H. Synge, Esq. The following gentlemen were ballotted for, and elected as honorary and corresponding members:—The Rev. T. F. Dymock, E. A. Freeman, Esq. the Rev. Joseph Hunter, the Rev. Richard Warner, W. Yarrell, Esq. Charles Empson, Esq. and W. Tyson, Esq. The gentle-

men appointed as local Secretaries were J. H. Pring, Esq. M.D. and the Rev. C. P. Parish. H. C. Trenchard, Esq. and the Rev. H. Parr, were elected new members of the Committee. The names of sixty-four new members were also added to the roll of the Society.

After the conclusion of the formal business, the meeting was adjourned till one o'clock, when the chairman opened the proceedings in a brief and appropriate address. He directed the attention of such as wished to visit some of the objects of archæological interest in the vicinity, to a few within reach. The first place he would mention was Churchill, about ten miles distant, where, on a bold ridge of the Mendip Hills, was to be seen a remarkably fine Roman encampment. Many were aware that at Cheddar there was a fine stream of water, which gushed from the base of the cliffs. At some few miles from the spot, amongst the Mendips, was what was termed a "swallet hole," into which flowed a stream of similar volume, and it had been surmised that this stream was the one which found its vent at Cheddar. That supposition was now confirmed. A mining company had recently been established on the hills, whose refuse materials sometimes discoloured the water of the engulphed stream, and the same water now found its way, in its discoloured state, to the stream at Cheddar. At Wrington was still standing the house in which John Locke was born, though it derived its interest solely from this circumstance, and was little worth looking at as a building ; near it however was the very fine old parish church, which was well worthy of a visit. Adjoining to Wrington, was the fine old church of Yatton ; and there was also a church of much interest at Christon, a very small structure, and supposed to be one of the oldest in Somerset. On the part of the inhabitants of this neigh-

bourhood he begged to thank the Society for having chosen this place for holding their present anniversary meeting.

The Rev. F. WARRE, one of the honorary secretaries, announced that a letter had been received by Dr. Pring, the local honorary secretary, from the Duke of Northumberland, expressing his grace's regret at being unable to attend the meeting of the Society.

Mr. C. E. GILES then read the following report;—

"Your Committee, in presenting their Annual Report, would beg to inform you that their principal undertaking during the past year, has been the arrangement and publication of the first volume of the Society's Proceedings. As this volume comprises a period of nearly two years, it is of an unusually large size, and has been a work of some considerable labor; involving, moreover, a large outlay of your funds. But your Committee believe that this outlay has been fully justified, as well by the new and interesting matter which the volume contains, as by the prospective advantage to the Society in the increase of its members, through making its operations more generally known. For any errors or imperfections in the details of this work, your Committee would hope that a kind allowance may be made; as the task of editorship, and the difficulties attending publication, require an amount of experience, to which the members of your Committee have hitherto been able to lay no claim. The volume (as you are aware,) has been presented GRATIS to all who were members of the Society at the time of its publication; the remaining copies have been purchased by the publisher, of whom they may be had at 6s. 6d. each. Your Committee venture to hope that the future state of your

funds will admit of the publication of a similar volume from time to time, of good type and character, but of smaller dimensions, and at a more moderate cost."

"A serious loss to the Society's funds, as well as much inconvenience to persons wishing to become members, has accrued from Rule IX, restricting their election to *General* Meetings; and your Committee have, in consequence, proposed to amend the said rule, so as to secure to candidates the earliest possible admission."

"Agreeably with an alteration made in Rule IV, at our last Anniversary Meeting, arrangements were made for holding a General Meeting in the Spring and the Autumn of the present year; but your Committee having learnt that very many influential members would be absent from the county during the Spring, found it necessary to limit the business of that meeting to the election of members, and to the transaction of other matters of routine."

"In compliance with the request of many persons resident in and around Taunton, a series of monthly evening *Conversazioni*, confined to the subjects embraced by the Society, was held in the Museum during the last winter. But it is our duty to state that no portion of the funds of the Society was appropriated towards the expenses of these meetings; a small entrance fee being found more than sufficient to cover all the necessary outlay. These meetings appeared to awaken an interest in the Society's proceedings; and under these circumstances, the Committee propose to commence a second series in the course of next month, of which due notice will be given to each member."

"The Museum has received donations and deposits of several objects of interest during the year; among which should be mentioned the following:—A valuable specimen of Tessellated Pavement found at East Coker, presented by

C. J. Helyar, Esq. A very fine collection of Rubbings from Brasses, deposited by the Rev. H. Alford, of Wymeswold. Several very fine Rubbings, by the Rev. E. C. K. Bearcroft. Several interesting Implements found in the shafts of mines worked by the Romans, below Quantock, by the Rev. F. Warre."

"As the Society is unable, at present, to devote any considerable sums to the purchase of specimens, your Committee would respectfully invite collectors to render their assistance; and beg to call attention to Rule XIX, regulating loans."

"Your Committee has entered into correspondence with the Architectural Society of Northamptonshire, and the Archaeological Society of Sussex, upon the invitation of those bodies."

"The assembling of the Archaeological Institute of Great Britain and Ireland, at Bristol in July, cannot have failed to excite a general interest in our pursuits. Many of our members attended its sectional meetings, and some were able to assist them with communications of interest. Your Committee deem it due to the able officers of that most important body, to acknowledge their readiness at all times to co-operate with our Society, and to aid us in our local efforts, from the stores of information at their command. Your Committee would call especial attention to the able lectures on Wells Cathedral, delivered by Professors Willis and Cockerell, and to a valuable recent publication by the latter gentleman, illustrating the sculptures of the West front of that venerable pile."

"The number of members on the Society's books for the present year amounts to 339, and your Committee in concluding this brief report, has the pleasing task of congratulating the Society, as well on its generally flourishing

condition, as on its increasing usefulness for the purposes for which it was established."

Mr. BADCOCK, the treasurer, presented his report, an abstract of which is subjoined, viz. :—

The Treasurer in Account with the Somersetshire Archæological and Natural History Society.

Dr. **Cr.**

1851.	£	s.	d.
Balance of former account	74	16	10
Subscriptions, donations, &c.	267	14	4
	£342	11	2

1851.	£	s.	d.
Curator's Salary	25	0	0
Rent of Museum Room	26	0	0
Printing, Plates, &c. first Vol. of Proceedings	226	5	7
Books, Maps, &c. &c.	49	12	4
Stationery, &c.	13	8	8
Balance	3	5	7
	£342	11	2

R. G. BADCOCK, Treasurer.

Mr. MILES, M.P. in moving the adoption of the report, expressed his conviction that an increased interest had been aroused in the county by the recent meeting of the Archæological Institute, at Bristol. He was happy to find that the utmost economy prevailed in the management of the funds of the Society.

Mr. DICKINSON seconded the motion.

The first Paper was by Mr. E. DAVIS, on the Abbey Church of Bath. At the outset he remarked that many accounts had been written of the Abbey, all of them speaking in the highest terms of the beauty of its design, but agreeing also in the faultiness of the details and the clumsiness of the work. He looked on the building, however, in a different light. He did not consider it as an example of the perpendicular, but as the herald of a new style. At the beginning of the sixteenth century, about which time the Abbey was designed, the literature and art

of other nations were very generally studied in England, and the traveller came home with a growing admiration of the monuments of Rome. In the design of the Bath Abbey, it was evident that the architect was alive to the follies of the day, and endeavoured to avoid them. His aim was to avoid the perpendicular lines and the angles then so much praised ; and the appearance of poverty in the building was the result, not of that design, but of the smallness of his funds. The arches of the nave and choir were elegant, without extreme lightness ; and beauty, not monotony, was the result. The roof appeared to derive support from invisible means, and was a model of grace, elegance, and lightness. The merit of the design of the church could not be doubted ; the cleverness of its construction had always been allowed; and he was at a loss to see why rudeness of workmanship had been imputed to it. It was the commencement of a new style, and having the building before them, all united in praising its general effect.

A paper was then read by Mr. FREEMAN on the Perpendicular Churches of Somerset, which is given in full in Part II.

MR. DICKINSON, in moving a vote of thanks to Mr. Freeman and Mr. Davis, thought it necessary to state that there were some points in Mr. Freeman's paper, as his preference for the Perpendicular style, with which he did not himself agree; as to his remarks on Mr. Ruskin, he thought it should be distinctly understood that Mr. Freeman's observations only expressed his individual opinions, and in no wise compromised the society as a body.

The Rev. MALCOLM CLERK took the opportunity of referring to some remarks made by Professor Willis in his lecture on Wells Cathedral, at the recent meeting of the Archaeological Institute. Mr. Willis had said,

that the west front could not have been built by Joceline Trotman. The reverend gentleman proceeded at some length to point out the grounds on which he came to an opposite conclusion.

1st. That he had not seen any *consecration deed* of the Bishop's, and did not know where such was to be found, but that the Liber Albus No. 2, favored as he supposed, his theory ; the date of the consecration of the church is there stated to be October 23, 1239 ; and if the church was not finished at the time of its consecration, there is no reason to suppose that the Bishop left off building as soon as it was consecrated.

2nd. A document in the Liber Albus No. 2, (and also in Wilkins,) which bore date the year of Joceline's death, (he believed A.D. 1342,) two years and half or more after the consecration, the purport of which is to assign revenues to the ministering priests, to his mind clearly spoke of this assignment of revenue as his last necessary act, in regard to his cathedral, *after having completed all else that was required for the due celebration of divine worship, &c.* which would hardly have been said, if he had left the west front a large blank, only protected from the air by some temporary construction.

3rd. The Canon of Wells, and also Godwin, both favoured his idea (in passages which he gave) that the west front, or rather all west of the choir, was *the* particular portion which bishop Trotman cared to build.

4th. The style of the architecture, by Mr. Willis's own confession, gave no token of late construction.

5th. If Bishop Joceline did not build the west front, the only person who could have built it, must have been one of the Buttons, as an inscription thereon (of which he presented a rubbing,) seemed to indicate.

The next paper was then read by the Rev. W. PHELPS, the well known Author of the History of Somerset, on West Britain previous to the Roman occupation.

The morning sitting was followed by the ORDINARY.

The Evening Meeting

Commenced at seven o'clock, when a large company assembled, the High Sheriff again presiding.

A paper was read by Mr .A. CROSSE, on Holwell Cavern, which is given in full in Part II.

The communication by Mr. Crosse was followed by a paper by the REV. W. CROTCH, on the Recent Plants and Shells of the Weston District.

The next communication was a paper by Mr. C. MOORE, on the "Aptychus," which is given in Part II.

Mr. DICKINSON moved a vote of thanks to the gentlemen who had favoured the meeting with their communications.

On the motion of the Rev. PREBENDARY CHILCOTT, the thanks of the meeting were voted by acclamation to the President, for his able conduct in the chair.

Mr. KNYFTON, having acknowledged the compliment in suitable terms, the meeting adjourned at eight o'clock.

Second Day.

Wednesday, September 17th.

THE proceedings were resumed at ten o'clock, when the High Sheriff again took the chair.

A paper was read by Mr. BAKER, on the Geological formation of the neighbourhood, which we trust to be able to give in a future volume ; after which

The Rev. F. WARRE read a paper on the British Camp on Worle Hill, which is given in Part II.

The Rev. W. PHELPS having given the second portion of his paper on West Britain, the meeting dissolved, and carriages having been provided, a numerous party proceeded on the EXCURSION. See page 16.

The Museum.

AMONG the very many objects deposited in the temporary museum, to the amusement and gratification of the meeting, the following are more particularly worthy of mention, contributed by

The Corporation of Axbridge.—Records and documents from the corporation chest of the ancient borough of Axbridge, some of which bear date eight centuries back, and make reference to a period when the forest of "Mynedeep" was a hunting chase of the Kings of England.

Mr. J. H. Smyth Pigott.—A large and beautifully formed bronze head of Diana, dug up at Bath, about a century ago. A bronze Cupid, dug up at Bath. A bronze Gladiator, formerly belonging to Chas. I. A bronze from Pompeii,—the sister of Trajan as Diana. A large and beautifully executed drawing, in water colours, by Stephanhoof, entitled the "Phases of Art," exhibiting the gradual development of painting, sculpture, and architecture, in a series from the Hindoo to the Grecian. A very handsome silver casket, designed by Raphael, executed by Cellini. It was presented to Horace Walpole, by Sir H. Mann, and was originally in the possession of the Grand Duke of Tuscany. The "Speculum," or conjuring stone, of Dr. Dee. Valuable Roman Cameos. A portrait of Locke. Specimens of Roman and Greek coins. MSS. relating to Bristol to A.D. 1554. Buckler's views of churches and old houses in Somerset. Porta de la Fisonomia Huomo, a very curious and unique copy. Portraits of the Smyths and Pigotts. The Intelligencer, 1661 to 1662. A MS.

work of Dr. Faustus. Indian sword from the Strawberry Hill collection. A large and valuable collection of autograph letters of eminent men, including Byron, Scott, Pope, Sheridan, Voltaire, Rammohun Roy, De Lolme, Drake, Lord Hood, Rodney, Sir T. Lawrence, Canning, Burke, Frederick II. of Prussia, &c. &c.

The Rev. R. C. Hathway.—An interesting reliquary from Kewstoke Church—a sacerdotal figure about eighteen inches high, having in the back a niche, in which were the remains of a chalice, adhering to the bottom of which was a residuum of coagulated blood, supposed to be that of Thos. à Beckett.

The Rev. F. Lockey, Bath.—An ancient iron vessel, found imbedded in a mass of conglomerate, on the shore off Charmouth, with specimens of the conglomerate and contents of the vessel.

The Rev W. W. Rowley.—Cases of splendid Indian insects, butterflies, beetles, &c.

The Rev. R. Symes, Cadbury Lodge, Yatton.—A small bronze figure found in a Roman Encampment on the Blackdown hills, near Taunton.

The Rev. J. H. Yatman, Winscombe.—An antique picture frame, containing a neatly-executed and ingenious model of Bristol Cathedral, made in pith, and bearing date 1715.

Mrs. Housman, Bath.—Transfer of brilliantly-tinted flowers from Pompeii; this transfer was made by Sir Humphrey Davy, and presented by him to Sir Thomas Lawrence.

Mrs. Farquharson, of Montacute.—A highly-ornamented antique stirrup, found at Hamdon Hill. A monastic ring and locket, found at Montacute Priory, and fifteen Roman coins, found near Hamdon Hill.

Mrs. F. H. Synge.—A silver coin of the Saxon King, Edmund I.

Mrs. N. Smith, Clifton.—A beautiful cornelian ring found in the ancient camp on Brean Down.

Dr. J. H. Pring.—Electro-type casts of rare old coins, seals, and medallions. A beautiful specimen of arragonite from Holwell Cavern, in illustration of the paper read by Mr. Crosse.

Dr. Jos. Hume Spry, Bath.—A tile in pottery from the Alhambra, with inscription in Arabic. Small earthen vase from Pompeii. Chinese mariner's compass.

Dr. Tomkins.—Cases of British and Roman pottery, keys, daggers, spurs, &c. chiefly from Abingdon. East Indian matchlock, inlaid with ivory. Persian sword with enamelled scabbard.

Mr. J. Baker.—Rare antique gold, silver, and copper coins.

Mr. Castle, Worle.—Three Roman cameos, of Nero, Ti. Claudius, and Vitell. German. in fine preservation, found at Kewstoke. Two very ancient bridle bits, a spur, and brass stirrup. An iron breast-plate or cuirass, dug up in the parish of East Brent, in 1820. A beautifully wrought ancient two-edged sword and a bill hook, and an antique two-handled porcelain jar. Cases of ancient coins found at Worle. A very singularly-formed bird's nest, &c.

Mr. F. G. Dowty.—Views of Cheddar Cliffs, and King's Cliff, North Petherton. Portrait of Erasmus, by Holbein. 120 impressions in sulphur, of Somersetshire seals. Small pair of oval Italian landscapes, on copper, by Patol. Brass key, from Glastonbury Abbey.

Mr. J. Elton.—Arctic Tern, killed at Weston-super-Mare, in April, 1842. Honey Buzzard, killed at Bitton,

near Bristol. Moutagu's Harrier, killed in Hampshire, in 1838. Gadwall Shovellers, shot in St. Phillip's Marsh, Bristol, 1830. Snow Bunting, shot at Weston-super-Mare. Hawfinch, shot at Coombe, near Westbury-on-Trym, one on Redland Common, and another on Durdham Down, near Bristol.

Mr. Charles Empson, Bath.—Rubbings from brasses in Devonshire, Oxfordshire, and Somersetshire. Idols of gold, found in the lake of Guanatuvita, South America; and a portion of the golden armour of Montezuma. A very singular and large spiders-nest, with a curious spring-valve entrance, from the Greek Islands. Arctic plants, collected by Sir E. Parry.

Mr. B. Fry, Axbridge.—Fine specimens in Ornithology, neatly mounted with appropriate landscape back grounds, including among them one of the Alpine Swift, shot in this county.

Mr. Shrowl.—Fragments of an urn and of bones contained therein, found by the late Bishop of Bath and Wells, in a barrow, on Mendip, near the fosse road from Ilchester to Bath, one mile from Oakhill brewery. Ancient brass vase, inlaid with steel. Ancient brass snuffers, enamelled.

Mr. Colebrooke Stockdale, of Torquay.—Drawings of the churches and old mansions of Somerset, of the west front of Wells Cathedral, and of Long Leet.

Mr. W. Stradling.—Part of a very ancient altar pall, wrought in gold. Needle work of the time Chas. I.—"the Judgment of Solomon." Needlework embroidered with pearls, representing the restoration of Chas. II. Pair of gauntlets diapered with gold. Potsherds from a Roman pottery. Gun locks of the time of the Monmouth rebellion.

Two interesting cases of birds, Buntings, and Woodpeckers, procured on Clayhill Farm, Cannington, and set up by Mr. W. Tucker, of that place. A case of eight species of Bats, taken near Bridgwater. A case of Skeletons of Bats, Shrews, Moles, Newts, &c. One case of Coleoptera, viz. Curculionidæ and Carabidæ—150 species. Four cases of Lepidoptera, viz. Papilionidæ and Hisperiidæ—64 species ; Sphingidæ and Zygænidæ—21 species ; Bombycidæ and Arctiidæ—52 species. Two cases of Hymenoptera, containing more than 300 species. A tray of fresh-water, land, and sea Shells, Nuts, Beetles, &c. found under brick-clay, near Bridgwater, more than twenty feet deep. A tray of fresh-water, land, and sea Shells, collected from sand-banks at Chilton Trinity, Chedzoy, Westonzoyland, &c. all of both sets agreeing with recent species.

The Excursion.

ON reaching the point of the hill at Anchor Head, the party left the carriages and scaled the defences of the ancient camp. After a brief breathing time, they scoured through the camp, led to the important points of the fastness by the indefatigable writer of the able disquisition which had just been read, and whose thorough conversance with the details of the fortifications, so well qualified him for the post of a leader on the occasion. The party then crossed the hill on foot to Kew Steps. Here attention was called to a large but shallow pit on the open down, in which it was stated no water remained as in neighbouring hollows. It was surmised that an extensive cavity existed beneath it. After a short controversy as to the origin of the cylindrical furrows in a depression or excavation at the top of the pass, the party descended the steps; here their leader pointed out the remains of flanking masonry built with the evident intention of narrowing the pass, and terminating at a spot, which he indicated, with a strong gateway. Presumptive evidence was thus offered that the pass had been constructed for military purposes, and in times much more remote than hitherto surmised. At Kewstoke, the party were received by the Rev. R. C. HATHWAY, vicar, and after an inspection of the church, and its most interesting feature, the old Norman doorway, re-entered the carriages, and proceeded to the ancient Priory of Woodspring.

Here an elegant refection had been provided by Mrs. SMYTH PIGOTT, the possessor of the estate. That lady was herself present, and most courteously received the visitors in the dining hall. We may here mention that the regretted absence of Mr. PIGOTT, from the meetings of the Society, was occasioned by serious indisposition. At the ancient entrance gateway, a paper on the Priory was read by the Rev. F. WARRE. At the close of the reading the party visited in succession the cloisters, the tower, and the noble but dilapidated refectory, now occupied as a wagon-house. Standing near the refectory, the Rev. F. Warre read an interesting notice respecting an ancient reliquary found at Kewstoke Church, now in the Society's Museum, at Taunton.

"I cannot" said he, "leave the subject without mentioning the discovery of a very curious reliquary in Kewstoke Church, which is probably connected with the dedication of Woodspring Priory to St. Thomas of Canterbury. The weight of the clerestory having forced out the north wall, which was of 14th century work, a mutilated piece of carved work which was built into it, was removed when the wall was pulled down, and proved to be a reliquary. In the front is carved a figure in an arched niche having shafts of early English character. This figure, the face of which seems to have been purposely mutilated, holds something, probably a heart, in its hands, but it is so defaced that it is now quite impossible to decide. At the back was discovered an arched recess, within which was a small wooden cup, containing what was supposed to be human blood. Now this reliquary was manifestly of earlier date than the wall into which it was built, and appears from the capitals of its shafts, nearly to correspond in style with that in use about the time of the dedication of Wood-

spring. The opinion of the Archaeological Institute of Great Britain and Ireland, to which it was submitted, was, that it probably contained the most valued relic possessed by the Priory—probably some of the blood of Thomas à Becket; and that the monks, foreseeing the desecration of their conventual church, had deposited it in the parish church of Kewstoke, hoping by that means to preserve from profanation a relique, in their eyes of the greatest sanctity, being no less than the blood of their murdered patron, St. Thomas of Canterbury."

From the Priory, the excursionists proceeded through a richly diversified country to the ancient and beautiful Church of Banwell, whose bells rung out a merry peal by way of welcome. Here in proximity to the lofty and handsome tower of the church, the company listened to an able disquisition on its architectural character and merits, from Mr. FREEMAN. They then visited the interior, where that gentleman continued his remarks.

On leaving the church, the party proceeded to the delightfully situated residence of CHANCELLOR LAW, where a collation had been munificently and with great elegance laid out, open to an unlimited number of guests, consisting of the members of the society and their friends. The beautiful grounds were thrown open to the visitors; and many of the more adventurous descended into the celebrated stalactite caves, which had been lighted up for the occasion.

The tables having been cleared, the company assembled round Mr. QUEKETT, to hear his paper on the structure and formation of Pearl, which the talent of the author and his eminent qualifications as a lecturer, rendered so interesting, that he was compelled a week or two afterwards, to yield to the pressing solicitations of the Committee, to repeat his lecture at the Society's Museum, at Taunton, to the great enjoyment of a numerous assembly of hearers.

In bringing the proceedings to a close, the High Sheriff, at the conclusion of Mr. Quekett's paper, took occasion on the part of the Society, to thank the Chancellor in the warmest terms for the handsome manner in which they had been entertained; their reception had been in every way worthy of his distinguished character for unbiassed hospitality, and for that kindness of feeling which had rendered him alike beloved and honoured by all classes amongst whom he moved.

The CHANCELLOR expressed the great pleasure and satisfaction he had enjoyed in receiving the Society, and in having taken some part with them in these interesting proceedings. After thanking Mr. Quekett, and passing a well merited eulogy on his able paper, he concluded by expressing a hope that on some future occasion the Society would again visit this neighbourhood, where a large unexplored field of great antiquarian interest still invited their further investigation, and that they would then afford him the gratification of again entertaining them on a more extended scale.

AT the Conversazione Evening Meetings of the Society held at the Museum, in Taunton, during the winter of 1850-51, Papers on the following subjects were read, viz.

1. On Ancient Defensive Armour, by the Rev. F. Warre.
2. On the Deposits of the River Parret, by Mr. W. Baker.
3. On British Shells, by the Rev. W. R. Crotch.
4. On Microscopic Fossils, by Mr. C. Moore.
5. On Street Architecture, by Mr. C. E. Giles.
6. On Female Costume during the Middle Ages, by the Rev. F. Warre.
7. On the Castle of Taunton, by Mr. W. F. Elliot.
8. On Male Costume during the Middle Ages, by the Rev. F. Warre.
9. On the Geology of the Somersetshire Coast, below the mouth of the Parret and Blue Anchor, by Mr. W. Baker.
10. On Ancient Music, by the Rev. W. R. Crotch.
11. On the Rise and Developement of Ecclesiastical Architecture, by the Rev. R. Mate.
12. On Ecclesiastical Vestments, by the Rev. F. Warre.

At one of the above meetings, Mr. Baker stated, that a specimen of Gold Ring Money, weighing 120 grains, had been recently discovered in the deposits of the River Parret, at Bridgwater, several feet below the surface. At a subsequent meeting, a letter to Mr. Baker from Mr. Albert Way, was read, on the subject of this discovery. Mr. Way observed that it was a remarkable fact, that the specimens of these rings were found in counties bordering on the coast, as in Sussex, Dorset, and in the present instance at Bridgwater.

PROCEEDINGS

OF THE

SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY,

1851, PART II.

PAPERS, &c.

On the Distinction between Anglo-Saxon & Norman Architecture.

BY THE REV. F. WARRE.

BEFORE I begin to read this paper, it is right that I should inform my audience that it contains but very little original matter from beginning to end; and also beg them to believe that I have not the least idea of teaching, as if I myself were any authority on the subject. But circumstances having drawn my attention to the subject for some time past, I think it not impossible that the few hints I have put together, may assist others, who perhaps have not thought much about it, in discovering Anglo-Saxon work in their churches; and, by so doing, in perhaps casting light upon a very difficult and much-disputed point in the history of the ancient architecture of this

country. I should also say, that from want of a good library, I have not been able to verify some of my quotations ; but they are taken from good authority, and are, I believe, correct.

The antiquaries of the last century, as well as those of the early part of the present, appear to have had but very vague ideas upon the subject of architecture. Even the learned Milner, whose fondness for Gothic buildings sometimes exposed him to the ridicule of the *virtuosi* of his day, who could see no beauty in anything which was not classical, considered every building in which the arches were not pointed, as Saxon; and though well aware that Walklyn built the transepts of Winchester Cathedral very shortly after the Conquest, was so little acquainted with the masonry of that time, as to suppose that he was also the builder of the tower of that cathedral, and speaks of them all, together with St. Cross —built by Henry de Blois, in the reign of Stephen—as Saxon edifices. Indeed, so little was the distinction of styles understood, that the celebrated Thomas Wharton, in his description of Winchester, confidently pronounces the work of Bishop Godfrey de Lucy, on the east side of the choir, to be prior to the date of Walklyn's work, though it is a very pure and beautiful, though early, specimen of the style in use in the thirteenth century, to which the well-known Rickman has given the name of early English ; and I believe the vergers still show the crypts as Saxon work, in spite of the rather contradictory fact, satisfactorily proved by documentary evidence by Professor Willis, that the Norman Cathedral built by Walklyn did not occupy the same site as that on which the original edifice stood.

When, however, the study of our ancient buildings became more popular, and was carried on in a spirit of closer

and more critical investigation, a great reaction took place, and when I first turned my attention to the subject, nearly thirty years ago, the received opinion among architectural antiquaries was, that no building remained, any part of which could with certainty be pronounced to be of Saxon workmanship; and that even those fragments which might be of earlier date than the Norman Conquest, were identical in style with those which were certainly known to be of later date than that event.

This view of the matter was, however, soon modified by the results of closer observation. I well remember when, about five and twenty years since, I was so fortunate as to become acquainted with that justly celebrated architectural antiquary, Mr. William Twopenny—that his opinion was, that there was no Saxon building in existence; and that about two years afterwards, when I again had the pleasure of meeting him, he told me that his opinion was changed, for that he believed he had discovered in the quoins of some buildings, which he had supposed to be early Norman, a peculiarity which he thought might prove to be a characteristic of Saxon masonry. That peculiarity was the system of bonding, now technically known as long-and-short work. And later researches have brought to light several other peculiarities, which are now generally supposed to be indicative of erections prior to the Norman Conquest, or, at all events, of a style differing materially from that known to be Norman, which prevailed in this country from the latter part of the eleventh to the close of the twelfth century.

A few of the most striking of these peculiarities I will now endeavour to describe. Before, however, entering upon the peculiarities of any style of architecture, it will

not be out of place to shew that it is at least probable that the style was really distinct from any other, more particularly as the ridicule which has been heaped upon the credulity of antiquaries, has rendered those of the present day a very sceptical race—much more so, indeed, than appears to me to be consonant with right reason; for it is in vain to search for evidence about things which took place nearly a thousand years ago, as conclusive as would be required to prove a fact of the present time. Now, we know from documentary evidence, that Edward the Confessor built at Thorney a church in a new style, and that this church was constructed by Norman architects, and was, no doubt, a Norman church. William of Malmsbury, describing the change among the clergy under the Normans, says: "Videas ubique in villis ecclesias, in vicis et urbibus monasteria novo edificandi genere consurgere." "You may see churches and monasteries rising in a new style of architecture." Now, if the Norman was a new style, the Saxon which preceded must have been different; and Ordericus Vitalis, speaking of the state of England in 1070, says: "Fiebant et reparabantur basilicæ." "Churches were built and repaired;" and certainly it is probable that the churches which were repaired four years after the Conquest, were Saxon buildings. If, then, we find in early Norman churches details very different from those common in that style, we cannot, I think, be fairly accused of unreasonable credulity if we suppose them to be relics of that old style, which was different from that introduced by Edward the Confessor in his church at Thorney or Westminster; nor is it really a valid objection that some of these peculiarities are found in churches, which are known to have been built after the Conquest; for the question is not so much, whe-

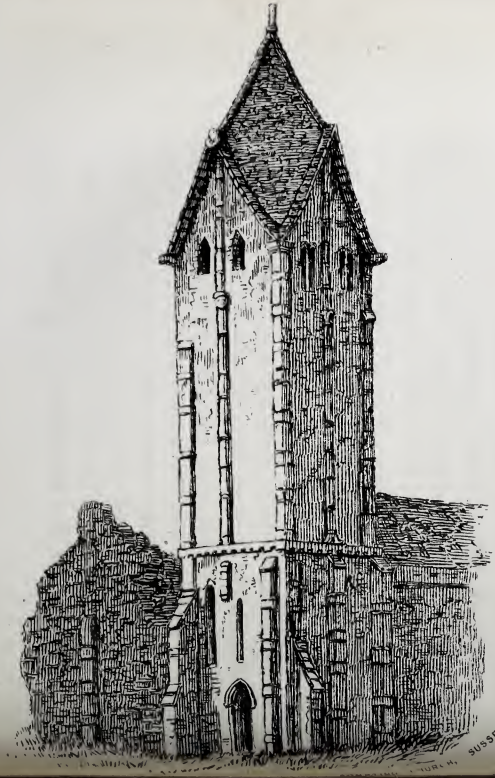
ther a Saxon or a Norman monarch held the throne, at the time a church was built, as whether the building is of the Saxon or Norman style ; and, though it is manifestly impossible that the details of a style, first used in the eleventh century, can be found in buildings of an earlier date, it is neither impossible nor improbable that details common in the latter part of the tenth, and the beginning of the eleventh, should occasionally be met with, particularly in obscure and remote districts, after the time of the Norman Conquest; and it is certain that besides those buildings which are clearly transitional, there are many instances in which the different styles overlap each other, if I may so say, in a very abrupt and striking manner.

In order to render my description of these peculiarities more distinct, I will divide them into those of the masonry, arches, doors, windows, and towers, of Anglo-Saxon date. And first, with regard to the masonry—this will almost invariably be found to consist of very rough and irregular rubble, or rag-work, the joints wide and the cement coarse, in one case,—the church at Britworth, near Salisbury,—containing pounded brick, which is supposed to be a Roman custom. It has been also observed that stones of a much larger size than those used by the Normans, are to be found among the smaller rubble ; but the most characteristic point of the masonry is, that it is often divided by narrow vertical strips of stone, which at first sight appear to be merely superficial, but on closer investigation will generally, I believe always, be found to extend quite through the thickness of the wall, forming a sort of frame work for the rubble, in the same manner as wooden uprights are used in forming what we in these days call a brick nogging, and are probably nothing more than stone substitutes for the timber, which had been used in earlier

times for that purpose. The quoins, too, are usually constructed of what is called long-and-short work, which consists of long upright stones, alternating with much shorter ones, which are usually of greater breadth, and act as bond stones on both sides, though at Sompting, the long and short stones appear to be of the same breadth. This system of bonding, I believe, has not been observed in Normandy, though it is found to exist in Sicily, in buildings supposed to have been erected by the followers of Guiscard de Hauteville.

Anglo-Saxon arches, when large, are usually semicircular, composed of coarse, irregular masonry, rising from a rude abacus or impost, frequently showing an attempt at imitation of Roman mouldings. When small they are often flat-sided, the capitals of the piers are sometimes coarsely carved in a manner very different from Norman work, and, as well as the bases, seem to be of a debased Roman character. The doors are generally semicircular, shewing traces of long-and-short work in their jambs; though at Dunham Magna, in Norfolk, at the west end, there is a triangular canopy over a square-headed door-way, consisting of a fillet with the edges cut into a sort of square billet ornament, with shafts of a similar character. The windows, which are small, have also generally semicircular heads, though they are not unfrequently flat-sided—their chief peculiarity being that the splay, which in Norman windows is perhaps invariably internal, is, in Saxon work, nearly, if not quite, equal; so that the narrowest part of the opening is at the centre of the wall. Small circular windows, splayed in this manner, are not uncommon in churches of this style.

We now come to the towers of this style, of which, as being probably the most costly, as well as the strongest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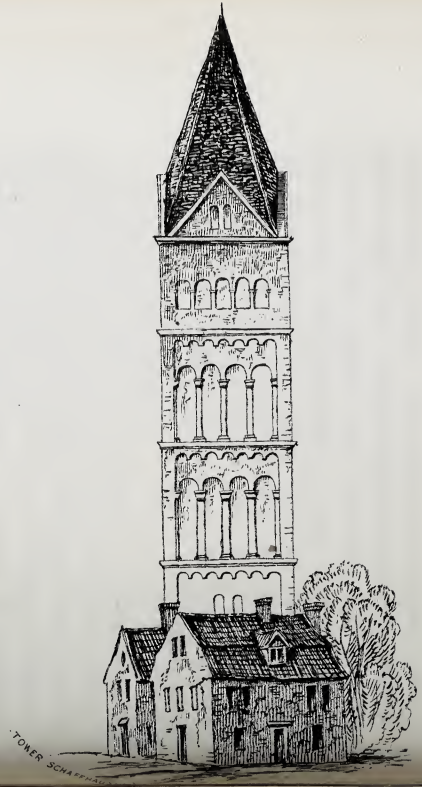
TOMER SCHAEFER

parts of the church, a much greater number have come down to us nearly in their original state, than of any other part of the building. These towers, though the walls are of great thickness, do not usually present the striking massiveness of proportion which is found in those of the Norman period. Sompting, with its steep gables and spire-like roof, is a strong instance of this difference of proportion. They are frequently of three stages; each stage being smaller than that below. They are destitute of buttresses and internal staircases, and generally bonded at the quoins with long-and-short work. The pilaster-like strips of stone before described, are generally to be observed where the masonry is not hidden by plaster—in some to a great extent—and at Earls Barton in such profusion as almost to have the appearance of trellis work. They have frequently small triangular windows, and in the belfry stage, commonly a small double window, the division of which is formed, not as in Norman work, by a shaft, but by a baluster placed in the centre of the wall, and supporting an impost, which extends through its whole thickness.

These are the most striking peculiarities of which I am aware. They are, perhaps, seldom all to be met with in the same building; but their effect is such, that they can hardly be mistaken when once pointed out, for the more common details of Norman buildings. Good examples of them all will be found in the illustrations of the Archæological Journal, and in the new edition of Rickman's work on Gothic architecture. It is a curious corroboration of the theory, that these peculiarities are indicative of Anglo-Saxon work, that similar architectural details are represented in illuminations of the ninth and tenth centuries, though I believe not in any of later date.

I will now hazard a conjecture as to the style of the

buildings of which these curious relics of antiquity are fragments; for I cannot bring myself to believe that no greater difference existed between it and the Norman, than that of ruder workmanship and less skilful building. The classical architecture of Rome in its debasement seems to have diverged into three, or perhaps four different channels—the Byzantine, Lombardic, Norman, and that style of Romanesque which appears to have prevailed in some parts of Europe, particularly in Germany, as late as the fifteenth century. Of the Byzantine, the most celebrated specimen is the Mosque of St. Sophia, at Constantinople. Of the Lombardic, a splendid, and I believe correct, specimen may be seen in the church recently erected at Wilton, by the Honourable Sidney Herbert. Germany is full of the fourth variety, and our own country affords us numberless examples of the Norman, from the magnificent cathedral down to the humble parish church. All these styles the beautiful works of Mr. Galley Knight, the masterly drawings of Mr. Pettit, and the valuable work on German churches by the master of Trinity College, Cambridge, have made familiar to every admirer of ecclesiastical architecture. Now if we include them all under the generic name of Romanesque, the specific difference of the Norman appears to be, that it has a gothicizing tendency, or in other words, is a transitional style, which runs as easily into the early English as that into the decorated; which is not the case with the others, which are fixed and complete styles. A scientific architect would no doubt be able to explain this clearly; but unfortunately my scientific attainments on this, and I am afraid on all other points, may fairly be described as a negative quantity; and though I think that from habit I can tell a Norman building when I see it, from the other varieties of

Romanesque, I am not presumptuous enough to attempt to explain to others what I very much doubt whether I understand myself.

Now, we know that the Anglo-Saxon church, from the time of Augustine to that of Edward the Confessor, was peculiarly devoted to the Roman Pontiff—that the communication between England and Rome was frequent and intimate—that some of the Saxon kings, amongst others the youthful Alfred, visited the eternal city; and, in short, I am afraid that if ever a thoroughly priest-ridden people existed, our Saxon ancestors were that people. It was therefore much more likely that they should have derived their ecclesiastical architecture from the fountain head, than from any other source. Benedict Biscop is said to have built churches "more Romano," and Wilfred, Archbishop of York, whom we know to have founded churches after his return from Rome, at the end of the seventh or the beginning of the eighth century, no doubt built them "more Romano" also.

Wolstan, in his metrical description of Winchester Cathedral, as re-edified by the Bishops Athelwold and Alphage, about the year 980, says: "He repaired the courts of this old temple with lofty walls and new roofs, and strengthened it on the north and south sides with solid aisles and various arches; he added also many chapels, with sacred altars, which distract attention from the threshold of the church, so that a stranger walking in the courts, is at a loss where to turn, seeing on all sides doors open to him without any certain path. He stands with wondering eyes, fascinated with the fine roofs of the intricate structure, until some experienced guide conducts him to the portals of the farthest vestibule. Here, marvelling, he crosses himself, and knows not how to quit, so dazzling is the construction, and so

brilliant the variety of the fabric that sustains this ancient church ;"—a description it must be allowed, little suggestive of the simple, stern majesty of an early Norman cathedral. Nor is his description of the tower, in which may be recognised some similarity to that of Sompting, at all more like one of Norman date. "Moreover," says he, "you have added a lofty temple, in which continual day remains—a sparkling tower, that reflects from Heaven the first rays of the rising sun. It has five compartments, pierced by open windows, and on all four sides as many ways are open. The lofty peaks of the tower are capped with pointed roofs, and are adorned with various and sinuous vaults, curved with well-skilled contrivance. Above these stands a rod with golden balls, and at the top a mighty golden cock, which boldly turns its face to every wind that blows." The description of the monastery, built by Alfred at Athelney, as given by Camden, on the authority of William of Malmsbury, is as follows: "He founded there a little monastery, the whole frame whereof hanged upon four main posts, pitched fast in the ground, with four round isles of spheric-work contrived and brought round the same." Now, however little applicable these descriptions may be to Norman buildings, they are by no means unlike Lombardic or Byzantine edifices, particularly the last, which, if we suppose it to have been a square building, with round towers at the corners, having a dome and pinnacles, such as we know from illuminations to have been in use among the Saxons, was a building of decidedly Byzantine character. That domes were used by the Saxons is rendered probable by an illumination of early date, which contains an object which seems to be intended to represent one.

The conclusion from what has been said, which after all is little more than a guess, is this, that the style of

architecture which prevailed among the Anglo-Saxons, was a variety of Romanesque, probably a rude imitation of Lombardic, with some intermixture of Byzantine details, bearing no greater resemblance to the Norman, than was necessarily the consequence of their common origin from the classical Roman.

The interest attaching to this point, I think, will at once be admitted by every antiquary who remembers that from the time that Benedict Biscop began to build churches "more Romano" in the seventh to the close of the twelfth century—a period considerably longer than that occupied by the three pointed styles. Romanesque, in some shape or other, was the style of ecclesiastical architecture which prevailed in this island; and that the Norman does not occupy above 150 years of that period; that during a considerable part of that time the Anglo-Saxons were neither an uncivilized nor an unlearned people, but one which gave birth to such men as Benedict Biscop, Wilfred, the Venerable Bede, Ethelward, Aldhelm, and the immortal Alfred—which entered into treaties with Charlemagne, and held no obscure position in the political system of Europe; nor is the field by any means a narrow one. There is probably far more Saxon work in existence than is generally supposed, particularly in the eastern and northern counties. In Somerset the West Saxon Kings had more than one residence; and I doubt not the traces of their work may be found in many places, if carefully searched for. It has been supposed that it is useless to look for Saxon work in any church that is not mentioned in Doomsday-book. But this is not necessarily the case, for, though a wonderful production, Doomsday-book is by no means a perfect survey; and not being undertaken for ecclesiastical purposes, does not mention more

than about 1,700 churches, though we know that many more, and some (as Dorchester, in Oxfordshire,) of great importance, existed in places where no church is mentioned.

A very few years ago we knew but little more of Norman work than we do now of Saxon, and in those few years we have learned to discriminate between early and late Norman, and to decide with tolerable accuracy the date of each building. Nor are differences wanting in Saxon work which may probably be discovered to be good criteria of date. For instance, may we not conclude from the decidedly Roman character of Brixworth, and the Roman composition of the cement at Britworth, that they are of very early date—either relics of Roman civilization, or instances of the skill directly imported from Italy. Again, if we find, as we very probably may, that in some cases the pilaster-like strips of stone are really superficial, instead of extending through the thickness of the wall and forming a frame-work for the rubble,—may we not, taking the analogy of Grecian architecture for our guide, conclude that those buildings in which only the appearance exists, are of later date than those in which the strips are actually the frame of the building; an idea which appears to me to gain strength from the fact of the long and short stones in the quoins of Sompting tower, (which, from its similarity to that described by Wolstan, is probably not earlier than the middle of the tenth century,) being of equal breadth, and consequently not really useful as bonding; and when we find plans or details of marked Byzantine character, may we not suppose that they were introduced either by the Northmen, (whose intimate connection with Constantinople is proved by the fact of Harold Hardrada commanding the Varangian Guard about the year 1030, as well as by the coins of Greek

emperors and ornaments of Oriental character constantly found in Norway,) or by Theodore, a native of Tarsus, in Cilicia, who was appointed primate of England by Pope Vitalian about the end of the seventh or the beginning of the eighth century.

But it may perhaps be said all this may be very true, but what practical good can arise from the study of such a rude style of architecture. I will mention a fact which I am sure will be sufficient to satisfy any archæologist that great practical good might arise from a more particular study of the Romanesque styles. Some time since I had occasion to apply to a very learned ecclesiologist for information as to the date of the earliest known specimen of a lychnoscope or low side-window, and the answer I received was that he had seen one in a Romanesque building. Now my object was to find, if possible, some ritual observance, the introduction of which about the time of the earliest known lychnoscope, might perhaps have thrown light upon the intention of those mysterious apertures; but for this purpose his answer, taking in as it did a period of full 500 years, was manifestly useless.

I fear I have handled a subject, to master which requires learning, in a very unlearned manner. I have felt all along that I was in danger of getting beyond my depth. Whether I have escaped that danger or not I am by no means certain; but should I have been the means of drawing the attention of any one to Saxon remains, and by so doing should elicit a few communications on the subject, my object will in great measure be obtained; for archæological induction can only be satisfactorily drawn from the knowledge of many facts, which can hardly be obtained by the unaided exertions of a few individuals, however zealous they may be in their antiquarian researches.

Holwell Cavern.

BY ANDREW CROSSE.

HOLWELL Cavern is a fissure in a limestone rock, situated at the north-west side of the parish of Broomfield, in the county of Somerset. This rock has been quarried for several years, and is perfectly free from organic remains; but occasionally cubes of sulphuret of iron are found embedded within it. There is a difference of opinion as to the kind of limestone of which it is composed. Some geologists have determined it to be mountain limestone; but I know not how this can be reconciled with the entire absence of organic remains. I believe the mass of it is of the transition kind, but containing some veins of bituminous limestone. In the immediate vicinity, and to a certain extent within the cavern, are strata of clay slate, which come into contact with the lime rock which lies at the foot and eastern side of the grawacke of the Quantock Hills, upon which it rests. The length of the fissure, as far as it has been examined, is 127 feet; and it is from three and a half feet to twenty in breadth, and from five, to upwards of twenty, in height. Its direction is from east to west, and it is entered at the eastern end. There are some other smaller fissures on the north side of

T.H. Hair, Printed by Woolley, Taunton W.F. Elliot, Del.

ENTRANCE TO HOLWELL CAVE,

the main one, running nearly at right angles to it. At the extreme western end of this cavern is a small pool of water, supplied by a little spring which percolates the rock and passes off through the bottom of the pool. The entrance into the cave has its roof and sides covered with stalactitic carbonate of lime, and you descend several steps, which have been hewn in the rock to allow a better ingress; and the main fissure has likewise been widened artificially for the same purpose. The roof and sides of the western end are more or less covered with snow-white crystals of arragonite, in great variety—massive with fibrous crystals diverging from a centre—coralliform, composed of aggregations of diverging crystals, (*flos ferri*), mostly translucent, rarely transparent—the colour varying from a snowy white to pale red, but mostly the former. These crystals readily scratch common carbonate of lime, and even glass, but with some difficulty. Water is constantly dropping from the projections of the roof at the western end, and the arragonite would be slowly increasing were it not for the depredations committed on it for some time past by collectors of specimens, who, not contented with fracturing it in all directions, have partially blackened the roof by the smoke of candles. Very large stalactites and stalagmites also have been removed, so that the cavern presents a very different appearance from what it originally did when first discovered. It has been stated both by myself and others, that all the common carbonate of lime found in this cavern has been formed solely upon limestone, and all the arragonite upon clay-slate—Since this statement has been made I have closely examined the matrix upon which these crystallizations are deposited, and though I still find a very large proportion of arragonite upon the clay-slate, yet I find a considerable quantity of

similar arragonite formed upon limestone. There is a wide difference between the rapidity of the growth of the arragonite and that of the common carbonate of lime, the latter increasing several inches in length, whilst the former makes an almost, or quite, imperceptible progress. Thirty five years ago I observed a small basin in the floor of the principal northern fissure of the cavern. This basin was then about fourteen inches in diameter and five inches in depth, and was kept full and overflowing by water constantly dropping from the stalactitic roof. The bottom and sides of the basin were formed of stalagmitic carbonate of lime. At present, instead of exhibiting a concavity five inches in depth, it presents the appearance of a stalagmitic convexity, having its centre elevated upwards of two inches above its circumference, so that, measuring from the bottom of the basin, as it was thirty five years ago, and unto the top of its highest projection, as it is at present, it has grown fully seven inches in height, giving a stalagmitic increase of one inch every five years, or one-fifth of one inch in each year. Now this is certainly a most rapid growth, and far greater than I should have anticipated. If loose stones are thrown into the water of the small pool at the western end of the main fissure, they are, after no long period, entirely covered with crystallized carbonate of lime, in the well-known form of dogtooth spar. I cannot say how long a period is sufficient for this. This water holds a certain quantity of carbonate of lime in solution, with a little sulphate and muriate of lime, and a trace of common salt; but I suspect that these ingredients vary in proportion at different times of the year. The arragonite found upon the roof of the cavern contains no strontia, which was at one time considered to be a necessary ingredient in all arragonites; but this is by no means the case, as,

although this earth is found in many arragonites, there are at least an equal number without it. The main difference between arragonite and common-carbonate of lime, consists in its greater hardness and difference of crystallization—in fact, it is altogether a different arrangement of molecules. This arragonite contains no other substance than carbonate of lime, with the exception of now and then a small proportion of oxide of iron, which occasionally tinges it, giving it a peach blossom, pale red, or yellow colour.

So far I have given a description of this fissure in the limestone rock, or rather in the united rocks of the limestone and clay state. I now come to the *cause* of these crystalline formations. During several distant periods of my life, I have visited this cave, feeling assured that I should sooner or later learn some new principle from an examination into its interesting crystallizations. I have ever considered that in one sense it is better to follow nature blindfold than art with both eyes open; and very many years since I felt convinced that the formation and constant growth of the crystalline matter which lined the roof of this cavern, was caused by some peculiar upward attraction; and reasoning more upon the subject, I felt assured it must be *electric attraction*. Sir Humphry Davy, in pursuing the train of his magnificent discoveries, had found that while all acids were attracted to the *positive* pole of a voltaic battery, in like manner all alkalies, earths, and inflammable substances, were directed to the *negative* pole. His experiments were carried on mostly with very powerful batteries, whose action soon ceased; and although splendid in their results, were perfectly incapable of producing those more durable effects which are shown by a feeble, but long-continued, electrica action—such as

nature uses in her vast and varied laboratory. Moreover, there are other conditions besides electrical action, necessary to be observed, such as *a more or less even temperature, absence of light*, and in many cases a *constant motion* of the fluid holding the crystallizable matter in solution, either by dropping from the roof of a cavern, or by water constantly flowing, or by the continual alternate elevation and depression of the surface of the subterranean waters, which surface is for ever varying—low in summer, or more or less overflowing in winter—but *constantly in motion.* It is this eternal motion that greatly facilitates the growth of crystals. This would seem a strange doctrine in a chemical laboratory, where *perfect rest* is more or less essential to the formation of well-defined saline crystallizations ; but such is by no means the case with metallic and earthy matters. I have kept up a constant electrical action for three successive months, upon fluids in a state of unceasing ebullition, in a sand heat furnace, day and night without a moment's rest, the evaporated fluid being duly replenished and watched in the *most careful manner* ; yet the crystals formed were as perfectly solid and regular as similar ones taken from a mine, and were much accelerated in their growth both by the heat employed and by the motion communicated by such heat. There is another condition essential to the production of nearly, if not quite all, regularly-formed metallic, and most earthy, crystallizations. It is the interposition of a *porous medium* between the two opposite electrical poles engaged in the work of forming minerals. In art this is brought to pass by the intervention of tabular surfaces, or cups of porous earth, or other porous material, which is used to separate the fluids or substances acted on, so as to bring them together slowly and regularly into a solid form. It is

absolutely impossible, within the limits of this paper, to describe the various and immense advantages which attend this mode of operating, which acts as a sort of comparative safety-valve to the electric energy, having a vast tendency to check an undue power, and to keep apart the attracting principles from too hasty a union, which would be destructive of mineral crystallization. In nature, this is effected by wider or narrower veins of moist clay, termed in Cornwall "flookans," and which accompany most of the metallic lodes. These flookans are occasionally of immense size, and are sometimes parallel to the lodes, but mostly divide them at more or less obtuse and acute angles. Without these flookans, or other similar checks, in all probability no regular crystals would be discovered in mines. Electricians divide all known substances into what they term *electro-positive* and *electro-negative*, each of which is composed of self repellent particles, but attractive of their opposites. Thus the electro-positive particles held in solution are attracted to the *negative* pole of the voltaic battery, and the electro-negative ones to the *positive* pole. If a too powerful electric action be excited, the crystallizable matter will be attracted to its respective pole in a gelatinous or powdery form, according to its nature ; but no solid or definite formation will take place. If a somewhat less action be employed, a more solid but shapeless mass will be obtained ; but if a feeble power be made use of, the consequence will be the production of crystals with definite, well-formed facets—exactly similar in all respects to natural ones of the same kind. I have now an experiment in action which has continued for eight years without ceasing. It consists of the passing of a feeble electric current through a solution of silicate of potash, the negative pole of the battery being connected with a

piece of oak plunged into the solution of flint. On a platina wire, immersed in the same solution, and connected with the positive pole, is forming a deposit of silicious matter larger than a crown-piece, and arranged in concentric layers of white and brown shades—closely resembling what is termed fortification agate. It was very soft and gelatinous at first, but has been gradually indurating, and is at present considerably more solid than it was, although it is entirely covered by the solution. The old saying, "Ars longa, vita brevis," is strikingly exemplified here. Thus, *time* is required to bring these matters to perfection. The diamond is probably the electrical crystallization of ages. Now there are two reasons why heat and motion are greatly conducive to electrical crystallization. The first occasions a more rapid evaporation of the water holding the crystallizable matter in solution, and causes the fluid acted on to be a far better conductor of electricity. The second, or *motion*, so disposes the atoms that it agitates, that, being polarized by the electric action—that is, each atom having its opposite extremities rendered respectively positive and negative—they present themselves more readily to the opposite pole of the battery—the negative end of the atom to the positive pole having its outside still positive, or the positive end of the atom, as the case may be, being drawn to the negative pole, having its outside still negative; so that there is no impediment to the even and quiet passage of the electric current, and the continual transfer of the atoms acted upon to their respective poles. This may be better understood by placing a common magnet flat upon a table, with a sheet of paper lying upon it. If you let fall a mass of iron filings at once upon the paper, they will be attracted by the magnet below it into the form of a rude

mis-shapen heap; but if such filings be slowly sifted through a fine sieve, they will assume the form into which they are attracted by their respective polarities, and present a beautifully regular appearance, in obedience to the forces of the magnetic current. I must again observe that in such a sketch as this, I am only just able to touch upon the more prominent points affecting the subject upon which I am treating, otherwise I might adduce a host of experiments, whose results have undeniably proved the advantages of motion, in the electrical formation both of amorphous and crystallized matter. As one instance, if the electric influence be passed through lime water, when perfectly still, and a similar current be passed through an equal quantity of the same water, when kept in a state of agitation, the production of crystals of carbonate of lime will be much more rapid and abundant in the latter, than the former case. In fact, nothing in Nature stands still, however it might seem to repose.

"Nature ne'er meant this vast creation,
To lie one dull lethargic whole,
But, mistress of her great vocation,
Gave to the mass a glowing soul."

"Thus, from their deep recesses beaming,
Sprung life, and light, and joy to bless,
And billowing waves and waters streaming,
Their mighty Maker's hand confess."

All animal, vegetable, and mineral life, (for life it is, though of a lower order) is constantly advancing or receding.—*In the mineral world no two dissimilar substances come into contact or conducting communication with each other, with the intervention of water, without the one giving, in the course of time, a something to the other.*—Like the animal, or vegetable, they are in continual warfare, the result of

which are new substances—an apparent evil, out of which springs good,—exhibiting first, the deformity of decay, but ending in boundless beauty, and infinity of exquisitely varied formation. I have no doubt but that the secondary cause of these mighty changes is the electric principle,—Nature does not work with the voltaic battery of man, with its two dissimilar metals, and associated fluid, but she progresses, although with similar elements, yet different ones. The grass covers the soil with its verdure, absorbing from that soil electrically, the principles which support its growth, and decomposing by a power, far superior to that of art, and by laws ill understood, the substances in contact with its roots; making even the hard flints subservient to the birth of the tender vegetable above—carrying substances apparently insoluble by such a process, into its remotest ramifications, laughing at the devices of the chemist, and the boasted philosophy of man; still, let us endeavour to imitate, though at a humble distance; let us search for those laws, and although often baffled, we shall be well recompensed. The vast strata of granite and clay-slate which often come into contact, moistened by these subterraneous waters, are quite sufficient to excite electric currents, amply fitted for the purposes they have to perform. I have often produced crystalline matters without the use of a metal in its metallic state, or indeed any battery whatsoever. Some years since, being at Weymouth, I observed some rounded limestones and some sea shells embedded in the clay of a small perpendicular cliff, each stone and shell being covered with crystals of sulphate of lime. On looking around to investigate the cause of the formation of sulphate of lime upon these substances, I discovered a stratum of decomposing sulphuret of iron, running horizontally on the top

of the cliff and just below the soil ; accordingly I reasoned thus.—The rain-water penetrating the soil moistened the sulphuret of iron, and decomposed it, the oxigen of the water converting the *sulphuret* to the *sulphate*, and the sulphate of iron being a soluble salt, passed through the clay, and was slowly admitted into contact with the surfaces of the limestones and shells. A local electric action was excited, in which the limestones and seashells became negative, whilst the upper stratum of sulphuret of iron was positive. The sulphate of iron and carbonate of lime suffered each a decomposition, and sulphate of lime was produced in a crystallized form upon the negative surfaces of the limestones and shells, carbonic acid gas being liberated ; moreover, this iron being deprived of its sulphuric acid, absorbed oxigen, and was converted into red oxide of iron, which was abundantly precipitated around the base of the crystals of sulphate of lime, in a powdery form. In order to prove the correctness of this theory, on my return home, I took a large basin, half filled it with pipe-clay and kneaded up with water to the consistence of moist putty, and imbedded in the clay some pieces of limestone and some seashells. I next formed a stratum upon the clay of powdered sulphuret of iron, and then filled the basin with common water, and put it aside in a dark cupboard for a twelvemonth. At the end of this period I brought it into the light and examined it with no small anxiety ; but was delighted to find that every piece of limestone and seashells which had been embedded in the clay, when taken out, washed and dried, was covered with prismatic crystals of sulphate of lime, exactly similar to those found in the cliff at Weymouth, but of course they were small, though perfect. Such are the effects of what I term LOCAL ELECTRICITY. Observe that here no

battery was used, nor metal in its metallic state. It was simply a close imitation of nature, but followed out only for a year, whereas nature has at her command unlimited time and resources. Now as we find the great body of amorphous and crystalline formations which exist in the subterranean fissures or lodes to exist at a more or less considerable distance from the surface of the earth, and as the subterranean heat is found to increase pretty regularly from a few feet beneath the surface to the greatest depth which has been sunk, we may conclude that the temperature in which they are found is most congenial to their formation, as well as is the uniformity of such temperature. In fact, I commonly find in my artificial processes, whether I employ a higher or lower temperature, that it is desirable it should be as even as possible, thereby corresponding to the conditions under which they make their appearance in nature. I think, with many others, that the existence of a central fire within our globe is highly probable, and likewise that such heat is nearly constant ; or, if in a state of gradual diminution, that such diminution is extremely slow and regular, and not calculated to produce appreciable changes in the course of some centuries. The presence or absence of light occasions a very considerable difference in the electrical formation of crystals, both as regards their form, the size of each crystal, its solidity, the space over which they extend, and their adhesiveness to the substance upon which they grow. In some instances exposure to daylight altogether prevents the desired formation. I have found this to be the case with respect to sulphate of strontia. An apparatus calculated to produce such a formation was exposed for two months in a room with a southern aspect, but not a single crystal made its appearance on the southern side, and but

a few very minute ones were visible on the northern or shaded side, whereas on being carried down into a dark subterranean cellar and deposited on a shelf, prismatic crystals of sulphate of strontia rapidly shot out on all sides, and at the end of fifty-three weeks exceeded half an inch in length. Many years since I filled a tumbler with water taken from the pool in Holwell Cavern, and exposed it to the action of a small voltaic battery excited by water alone, connecting the opposite poles of the battery with the Holwell water by two platinum wires let fall into the opposite sides of the tumbler. An electric action immediately took place, which continued for nine days, but not finding any formation upon either of the wires, I was about to remove the whole apparatus, when at that precise moment a party of friends called and remained sometime. This most fortunate delay prevented the removal of the apparatus till the next or *tenth* day, when, as I went for the purpose of so doing, I plainly observed some sparkling crystals upon the negative platinum wire, which proved to be carbonate of lime, attracted from the mineral water by the electric action. I afterwards repeated this experiment in a dark cellar, and produced a similar result in six days. This was the first experiment of the kind. I have at present a glass quart jar, filled with the Holwell water, acted on by a small voltaic battery, through the medium of two platinum wires. It is placed on a shelf in the *dark*. I have likewise an exactly similar apparatus, alike in all respects, except that it is placed on a shelf in the *light*. These were both set in action on the 20th of last August; within ten hours crystals of carbonate of lime began to form on the negative wire of each, but none on the positive, and they have now considerably increased on both negative wires; but there is a wide dif-

ference between the crystalline formation in the dark and that in the light. In the first, the crystals are decidedly larger, and longer, and more firm. In the last they have a more soluble appearance, and are not so firmly attached to the wire. Besides, the termination of the negative wire in the light is surrounded by a kind of halo of insulated specks of carbonate of lime, forming a small ball of about one-fourth of an inch in diameter. When viewed through a lens, it exhibits a singular disjointed appearance. Now the negative wire in the dark has had such an influence on that side of the glass jar, that it is being covered to a large extent by carbonate of lime formations, which is not the case with the similar wire in the light, save to a very limited extent. In fact, certain of the sun's rays are electrical, and neutralize to a great degree, or materially change the electrical formation, which would take place were the experiment conducted in the dark. We have thus seen that the union of *electric action*, with a *moderately uniform temperature*, and *sufficiency of heat*, to prevent congelation of the fluid under action, *absence of light*, together with the interposition of a more or less *porous medium*, will attract the crystallizable matter from its solution and produce a variety of forms, which will not make their appearance without such conditions. We have likewise seen that those crystallizations or formations are greatly assisted by constant motion. Just on the conditions which exist in Holwell Cavern, and under these circumstances, I have produced about 200 varieties of minerals, *exactly* resembling in all respects similar ones found in nature, as well as some others never before discovered in nature, nor formed by art. Still, there are a vast number of minerals which, in the present state of the science, defy the ingenuity of man to imitate, but many

of which might have been produced by *central* or *volcanic heat*, or immense *pressure*, added to the other requisites. The last thing to consider is—*From what source does the required electric action arise?* Now in answer to this, as far as we know, it most probably arises from one of the following causes; first, from terrestrial electric currents, caused by permanent magnetic action passing at right angles to them; or secondly, from similar electric currents excited by the union of vast strata of dissimilar rocks in contact with subterranean waters; or thirdly, from similar currents either excited or aided by a central or volcanic heat, perhaps coming under the laws of thermo-electricity; or fourthly, and lastly—by the local electric action before alluded to, and which, I presume, is always the case as respects the formation of *insulated* crystalline matters which are found scattered in all directions—often at a great distance from metallic and earthy lodes or veins. These latter are probably formed by the constant action of definite terrestrial electric currents. In the case of Holwell Cavern, the electric power is probably excited by the contact of the clay slate and limestone strata; or there might be a definite current passing along, or at right angles to the main fissure, occasioned by terrestrial electricity, (the existence of which is *certain*) and on the *negative* portion of the roof and sides of the fissure, the arragonite would most certainly be deposited. I once formed some beautiful regular and irregular crystals of arragonite in a very simple manner, viz. by filling a common salting pan with spring water, and placing the two halves of a brick upon the bottom of the pan, at a small distance from each other, and resting a whole brick upon them, in the form of a bridge. Each end of this upper brick I connected by platinum wires with the opposite poles of a

weak voltaic battery, in constant action for three months, the apparatus being kept in a dark room. At the end of the above period I removed the bricks, and found that the negative end of the upper brick was rather strongly connected with the lower half brick on which it rested; and on forcing them asunder I discovered that the cementing material was composed of crystalline arragonite, some of which was formed upon both the united surfaces of the bricks, in snow-white needle crystals, radiating from their common centre; others were in the form of well-defined six-sided prisms, with flat terminations. These latter took shelter in some of the cavities of the bricks. The explanation of this is simple enough. The bricks were made of clay containing a certain per centage of lime. The water into which they were plunged contained a certain proportion of hydrochloric acid as one of its component parts. This acid was directed to the positive end of the brick, where it acted on the lime at that end, forming muriate of lime, the acid of which was retained at the positive end, and the lime, attracting carbonic acid from the water, formed carbonate of lime, which was directed to the negative end of the brick, where it shot out in crystals of arragonite. *Why* arragonite was formed here, instead of common carbonate of lime, I am at present quite at a loss to guess. I had the pleasure of shewing this formation to two highly scientific gentlemen, one of them a gifted foreigner, and one of the most distinguished chemists in Europe. I have at other times formed arragonite in different modes, but never could account for the reason why arragonite appears at one time, and common carbonate of lime at another, either in art or nature. The present theory of crystallization is most imperfect, little being known about it. I once by chance hit upon a mode of

producing the crystallized red oxide of copper, either in cubes or octohedrons, at pleasure; but I can give no reason why the one always made its appearance in one case and the other formation in the other. The day will probably arrive when more will be known of those matters.

I now come to another point, most intimately connected with geology; I mean the formation of fissures in the earth, on which I have made many experiments. If you take a porous pot—(a common garden pot will do, but it is better to cork up the aperture at the bottom of it)—and fill it with clay kneaded with water to the consistence of moist putty, (pipe-clay is the best for the experiment), and stand it upright in a large basin of water, in such a manner as that the surface of the clay in the pot shall be elevated four or five inches above the surface of the water in the basin; then connect the water in the basin by a platinum wire with the *positive* pole of a constant, but weak, voltaic battery; and lastly, force a platinum wire into the middle of the moistened pipe-clay in the pot, vertically, and at about half the depth of the clay, connecting the other end of the wire with the *negative* pole of the battery; the following effects will take place: If the battery is *feeble*, after a few days action two fissures, forming with each other two obtuse and two acute angles, will appear in contact with the wire, and will divide the clay vertically from top to bottom. The size of these fissures is comparatively great; and they will quickly be filled with water, drawn upwards from the moistened clay, which will form a small pool on the top of the clay, where it will shortly increase till it drops over the side of the pot, through a notch which should be cut in it, into the basin below. The clay would thus be soon emptied of its water, were it not replenished by that in the basin, which

passes through the porous medium of the garden pot, and keeps up the supply. Here we have, first, fissures in the moist clay, caused by a weak *negative* electricity ; secondly, a constant spring of water, *rising above the level of the supply*, occasioned by the same *negative* electricity ;—the first accounting for fissures made in strata when soft, but afterwards indurated by *time ;* the second, for springs issuing from the tops of hills elevated above all the surrounding ones. To *prove* that this is caused by *negative*, and *not* by *positive* electricity, reverse the connections of the wires with the poles of the battery, making that in the clay *positive* instead of *negative*, and that in the water in the basin *negative* instead of *positive*—then no FISSURE will take place in the clay, and all its moisture will be drawn out of it and added to the water in the basin, *incontestibly* proving that the fissures and spring were caused by *negative*, and *not* by *positive* electricity, nor by capillary attraction. If the experiment as first described be repeated, only substituting a *powerful* for a *weak* battery, a rapid and strong action will take place within the clay, and large pieces of it will be forced up in all directions, and large fissures produced, filled with a comparatively large quantity of water. Here we have the earthquake. Some years since I noticed an account of an earthquake in the kingdom of Ava, in the East Indies, in which it was stated that the earth opened in tremendous chasms, which were instantly filled with water, which gushed out in sufficient quantity to flood the surrounding country, causing vast damage. It was stated that each fissure was deep enough to float a man-of-war. Is not this closely analogous to the experiment here described? Again, if while the weak electric current is passing through the clay, as at first represented, you plunge three or four glass funnels

vertically into the clay, at some distance from each other, and fill each funnel with a solution of different metals, sulphur, &c. &c ; in the course of time these solutions will find their way through the clay into which they are stuck, and their metallic salts will be attracted by the same negative influence which occasions the other phenomena, become decomposed, and line the fissures with metallic earthy, or sulphureous crystals, according to the nature of the fluids employed. Here you have the *metallic* or *earthy lode*. By a similar apparatus, and using three funnels, filled respectively with silver, copper, and sulphur in solution, the experiment being continued for two years, and the fluid kept duly replenished, I lined the two fissures in the clay with the following substances, amorphous or crystallized native silver, sulphuret of silver, native copper, red oxide of copper, sulphuret of copper, and crystallized sulphur. Here were two complete lodes, which became considerably indurated at the termination of the experiment,—a mine in a garden pot. This would be sufficient to account for the fissures in the Holwell lime rock, when in its incipient state of moisture. Had metallic solutions been then in its vicinity, with a sufficient electrical current, sufficiently long continued, we should have seen there an east and west metallic lode, instead of an empty chasm, partially lined with arragonite or carbonate of lime. Nevertheless, as it is, it is a most interesting cavern, and the extreme beauty of the arragonite, even in its present state cannot easily be described. I shall conclude with an extract from an unpublished poem touching on this subject.

"Here not a breath at hand, nor distant sound,
Nor insect's hum disturbs the calm around ;
Silence, and sleep, and breathless, starless, night,

Here claim unquestioned, an eternal right.
The sheep's rude bleating, and its tinkling bell,
Pierce not the chasm, nor disenchant the spell.
The shepherd's whistle, and the watch dog's bark,
The raven's croak, the rapture of the lark,
Die on their passage, e'er they reach the gloom,
Or wake the echoes of the mineral tomb.
Here, whilst new realms arise, and old decay,
And centuries of crime are swept away,
The night-born filagree of ages gone,
Fenced from all living gaze, creeps slowly on.
Pendant from arching roof the drops concrete,
Till the rude floor the growing crystals meet,
And arborescent shoots their branches twine,
Like the soft tendrils of the tangled vine ;
The dazzling whiteness of whose stems might vie,
With drifted snows that on the mountains lie.

On the Perpendicular Style, as exhibited in the Churches of Somerset.

BY EDWARD A. FREEMAN, M.A.

IN appearing before a local body, at the request of its own executive, to illustrate any portion of the antiquities of the district which forms the sphere of that body, while I am sensible that such a request, preferred to a stranger, is a compliment of a very refined nature, I cannot but feel an unusual diffidence in treating the subject in the presence of so many who must be so much better acquainted with many branches of it than myself. I feel, of course, no greater difficulty than elsewhere in describing and commenting on those individual buildings which I have myself examined; the danger is that of generalizing from insufficient premises, and passing by typical instances with which greater local experience might have made me familiar. And I therefore feel the more grateful to those members and officers of the society, who have so kindly acted as my guides to many of the most important churches in the county, with which I might otherwise have remained unacquainted. As it was at their invitation that I undertook

the subject in the first instance, it is by their means that I am enabled to treat it in a somewhat less imperfect manner. Even thus, I have of course examined only a very small proportion of the numerous churches of so large a district; but I have gone, as far as I was able, into different parts of the county, and I trust that I have been enabled to see some specimens of most of the leading types that it contains.

And, if it be not demanding too great a sacrifice of your patience to my own egotism, I cannot help venturing the remark that I have acceded to such a request as emanating from a Somersetshire Society, with a peculiar pleasure beyond what would have attached to it from any other quarter. Though I am in no way connected with this county by property or residence, and though I had not the honour to be born within its limits, it is one in which I venture to challenge a degree of interest, and whose boundaries I never pass without a feeling of satisfaction on many grounds. I may call myself all but a native of it, as my very first recollections appertain to the town in which we are now assembled, when the striking objects of its natural scenery, Worle Hill, Brean Down, the Channel, the Holms, and the distant mountains of Glamorganshire, made an impression upon my childish imagination, which is not likely ever to be effaced. And to come more directly to our immediate subject, I have always maintained, and that with a very intimate knowledge of the churches of Northamptonshire, and some little acquaintance with Lincolnshire itself, the claims of the churches of Somerset to take precedence of all specimens of parochial architecture in the kingdom. To my mind, contrary, as I am fully aware, to the general opinion, they exhibit the most perfect style of architecture in its most perfect form, and are particularly admirable for that feature, which it is well nigh the greatest

boast of our English builders to have brought to its perfection, their graceful and majestic towers. I have selected, out of the buildings of all ages and all nations, the west front of a Somersetshire parish church as the frontispiece of my most important published work; in calling attention to a strange and almost forgotten cathedral, I have recognized the influence of Somersetshire models upon one of its most important features;* finally, in tracing out the infinitely varied forms of window tracery, I have found the most perfect of its later shapes well nigh the peculiar possession of the local style of this county.† In the district where I now reside, in those more distant regions of our island which have lately attracted most of my attention, I generally find that the highest compliment I can pay to a church is to say that it reminds me of a Somersetshire building. From the banks of the Severn to the rocks of Pembrokeshire, occasional imitations have from time to time reminded me of the structures of this favoured region; while in every neighbouring county, Dorset, Wilts, Gloucester, I have been always pleased to recognize some faint forestalling of the more perfect splendours contained within the fortunate limit. Being thus connected with your county by a tie which to me is no slight one, and having always looked to it as the very Utopia of architectural beauty, I may be excused for dwelling at some length on the peculiar satisfaction which I have derived from the present invitation to become the more special illustrator of its merits.

Of course I do not profess on the present occasion to put before you a complete treatise on the churches of Somerset; such a subject would require a far more general

* Architecture of Llandaff Cathedral, p. 17.

† Essay on Window Tracery, p. 191.

knowledge than I can pretend to, and would also be far too extensive for the limits of a single paper. I prefer to adhere strictly to one branch of the subject; and indeed the churches which I have recently visited with an especial view to the composition of this paper, I have examined almost exclusively with reference to that branch, often passing by, with but little attention, portions which were interesting solely on other grounds. But I cannot help recommending to this society to undertake a full and systematic examination of all the churches in the county, a work to which I should be proud to contribute my humble assistance, with a view to the publication of descriptions something in the same form as those put forth by the Northamptonshire Society. At present my general remarks will be very brief, and I will pass as soon as possible to my immediate subject, the Perpendicular of the district.

The strength of Somersetshire, like that of Northamptonshire, lies in its parish churches. It is not indeed so entirely denuded of conventual remains as that county, but even monastic ruins, much less monastic churches retained for parochial purposes, do not seem to be a striking feature in its architectural wealth. The grand buildings which I am best acquainted with are all of the strictly parochial type, although they occasionally approach in size and splendour to the dignity of cathedral or conventual buildings, and moreover belong to a style in which the two types of the minster and the parish church run much more into one another than was usual at an earlier period. At the same time it is an honourable fact for the local architecture that it admitted of having churches of the cathedral type erected in it, a circumstance probably occurring nowhere else. The Cathedral of Wells was indeed built before a local style had been developed of sufficient merit to be employed in

such a structure, but the two churches next in importance which the county contains, belong essentially to the local Perpendicular. I mean Bath Abbey and St. Mary Redcliffe. The latter is perhaps the only parish church in England conceived throughout on the cathedral model, with the sole and unfortunate exception of the absence of a central tower; and it is one which Somersetshire may claim as its own with the most perfect right. It is throughout an example of Somersetshire Perpendicular, a development on the cathedral type of the style of Wrington and Banwell. And I am by no means sure that we ought not to point to St. Mary Redcliffe as the cradle of the style. Its most important features are beginning to be developed in the transepts of that church, which are transitional from Decorated to Perpendicular. If we conceive them to have afforded the general model, we can readily account for the retention throughout the whole Perpendicular period of what I regard as the distinguishing and characteristic merit of Somersetshire work, namely the combination of unity and grandeur peculiar to the Perpendicular style with much of the delicacy and purity of detail more commonly distinctive of the earlier styles. Nowhere is this so conspicuous as in the transepts at Redcliffe. The general notion is intensely and magnificently Perpendicular, while the details are still to a great extent Decorated.

I have spoken of St. Mary Redcliffe as a Somersetshire church; I hope my Bristol friends will not consider their municipal independence invaded, if I place their whole city, for architectural purposes, within the limits of my favourite county. The architectural march, indeed, extends a good way into Gloucestershire; but Bristol is an integral part of the mother county. Its churches certainly form, in some respects, a marked class by themselves, but they

only differ as the type of Wrington differs from that of Taunton, and must be considered as forming a portion of the same whole.

Previous to the Perpendicular period, the churches of Somersetshire appear to have been, for the most part, structures of no very great pretensions. They seem to have been usually without clerestories, and, I suspect, very frequently without aisles. This I infer from the arcades being almost always Perpendicular ; we can hardly suppose that earlier arcades would have been so generally destroyed had they ever existed. They were frequently cruciform, and they have transmitted the use of that shape to some complete churches of the Perpendicular period, at which time I need not say it was very seldom employed in original designs. In some parts an octagonal tower, sometimes central, sometimes at one side, appears to have been frequent. The square western tower, when it existed, seems to have been very small and plain, as at Wilton and Trull. St. Mary's, Bridgwater, is an example on a larger scale, but with no further allowance of ornament. Now unfortunately, it seems destined to have all its characteristic features obliterated by that subtle form of destruction, which arrogates to itself the name of restoration.

In a general survey of the county, all traces of these earlier fabrics should be carefully attended to, and the different types which they may present among themselves should be accurately marked, as well as referred, as far as possible, to their causes; how far, for instance, they may be attributable to the influence of different abbeys, how far to the different stone of different localities, or to the appropriate requirements of different kinds of scenery. All these are points of great interest and importance, and ought to be thoroughly well worked out, but I can at present give them only a very limited share of attention.

These smaller and more ancient fabrics were far from being without influence on their more magnificent successors. A Perpendicular church seems to have been very seldom entirely erected from the ground; the chancel at least of the old building is generally retained, and too frequently, from its smaller size and inferior architecture, it forms a sad blot on some of the most stately fabrics of all. I may mention Wrington and Yatton, the latter especially. Here we have a cross church, of which the chancel, transepts, and central tower received only some modifications and additions during the Perpendicular repair, while a nave of the most magnificent character was erected to the west of them. The result is a ludicrous insignificance on the part of the chancel, and in the interior that ruinous circumstance to the effect of a cross church, lantern arches disproportionately low.

I suspect that in many cases, where the church was not cruciform, they first erected the tower to the west of the old nave, and afterwards attempted to bring the rest of the church into harmony with it by re-building the nave, (or, what is practically much the same, adding aisles to it,) and subjecting the chancel to greater or less modifications in detail. This would account for the very small Perpendicular naves which we sometimes find attached to the most magnificent towers, as at Bishops Lydiard. They were cramped for room by the old chancel at one end and by the new tower at the other.

I will allude briefly to a few instances where considerable portions of the early fabric remain, or where it has greatly influenced the subsequent Perpendicular structure. Whitchurch, near Bristol, is a good specimen of the original cross church without aisles; viewed from the north, it appears to be entirely unaltered, but on the south side the transept

has been destroyed, and an aisle carried along nearly the whole length of the church, producing an outline very common in Jersey, but very rare anywhere else. This little church has many points well worthy attention, but chiefly on grounds quite alien to our present purpose. At Othery, a cross church without aisles, and at Kingston, if I may be allowed the bull, a cross church without transepts, the original ground-plan is untouched, but the central towers have been re-built in Perpendicular times. Stoke St. Gregory is perhaps a more instructive case than any. This was originally a small Early English cross church with a central octagon. Of this fabric, the chancel, transepts, and tower seem to remain, with only alterations in detail. But a large Perpendicular nave and aisles, altogether disproportioned to the size of the church, have been substituted for the original western limb. So great was the increase of height that the ridge of the new nave roof came very nearly to a level with the top of the original tower. Consequently the Perpendicular builders added another stage to the latter in a manner harmonizing better with the original than such alterations often do ; and, what ought to be accurately observed, the original belfry windows were blocked and converted into niches for images.

In these cruciform buildings the original fabrics have necessarily had more influence on their successors than in other instances. They supplied an important feature in the central towers, which it would have been wanton prodigality to have destroyed. But even in other cases, their influence has not been unimportant. The retention of the original chancels has prevented one common Perpendicular development from obtaining in Somersetshire. We do not meet with the quasi-basilican type of Perpendicular church, in which the aisles run uninterruptedly

Woodcut by the Author.

on Stone by T. H. Hair.

to the east end or within a bay of it, the distinction of chancel and nave being made wholly by internal screen-work. It is indeed very usual for chapels to be added north and south of the chancel, but they almost always retain the character of chapels as distinguished from aisles, and the abrupt finish of their rich parapets often contrasts in a singular manner with the high-pitched dripping roof of the chancel. Wrington is a conspicuous instance.

The typical Somersetshire Perpendicular church consists of a lofty and elaborate western tower, standing disengaged from the aisles; a nave and aisles, with or without a clerestory, according to circumstances, with very commonly a large southern porch as high as the aisles; a high roofed and comparatively insignificant chancel, containing traces, more or less extensive, of earlier work, but with Perpendicular chapels on each side. Transepts are not uncommon, but cannot be called typical. There is a tendency to polygonal turrets in various positions; west of the aisles, as at St. Cuthbert's, Wells; east of the nave, as at Banwell; flanking a west front without towers, as at Crewkerne and Bath Abbey; north or south of the nave and aisles, often forming an approach to the rood-loft, of which there is a remarkable instance at Burrington, crowned with an elegant little spire. Pierced and other enriched parapets are common. The roofs are of various kinds, but different forms of the coved roof are typical here, as in the rest of the West of England and South Wales. The interiors are rich in screens and other kinds of wood-work, but with these, as ecclesiological rather than architectural, I have at present nothing to do.

We may generally remark, though the position must be taken with considerable exceptions, that the work in the northern part of the county is better than in the southern.

This, I am informed, is owing to a difference in the kind of stone employed. In the north we find a remarkable delicacy of workmanship, while, in the south, with the same general character, with nearly equal magnificence of general design, and with the same tendency to retain early detail, there is often much coarseness and clumsiness in the actual execution. This is particularly conspicuous in St. Mary Magdalen, Taunton, a church of most imposing general effect, but whose details will not bear examination. In the south we find ashlar masonry less commonly used in other parts than the towers, and a coarse battlement is in common use, while in the north we continually find straight parapets elegantly pierced, and more commonly broken by pinnacles. In the best churches in Bristol we find the same general excellence of work as in the neighbouring part of Somerset, but from the crumbling stone employed, the external enrichments have almost entirely vanished.

TOWERS.

I begin now with the towers. One would have thought that it could need no argument to prove that a grand Perpendicular tower ranked among the noblest triumphs of architectural skill, and that it was among the greatest boasts of England in general, and of Somersetshire in particular, to have brought so glorious a feature to perfection. Even the ecclesiological school, in their intense depreciation of our most truly national architecture, do not deny its positive beauty, but are content to place it after the form which finishes in a spire. This is a mere matter of taste, on which we may well be content to differ; it is in fact simply a question between the highest degree of grace and the highest degree of majesty. But there is another view of the subject which cannot be passed by so lightly,

or so gently. A writer whose works have recently made no small stir in the architectural world, has taken upon him to assert that all the world is wrong in this respect, also as well as in most others. The author of "the Stones of Venice,"*—what, by the way, would the world have thought if Dr. Layard had given us "the Bricks of Nineveh?"—would probably think the stones of Wrington, or even of Glastonbury, altogether beneath his notice; but it is impossible for an admirer of those glorious structures to let them fall undefended before his attacks, even though it is only a stab in the dark which is aimed at them. The two great offences appear to be presence of pinnacles and of buttresses, which I, like I suppose most other people, have hitherto considered to be very ornamental and necessary appendages. Now any difference about pinnacles or buttresses with such men as Mr. Petit or Dr. Whewell, one would argue out calmly and dispassionately, and with the deference due to such distinguished names; but it is impossible to preserve common patience over the childish rant with which Mr. Ruskin goes about to prove pinnacles offenders against what he calls the "Lamp of Beauty." "I believe," he says, "that all that has been written and taught about proportion put together, is not to the architect worth the single rule, well enforced: 'Have one large thing and several smaller things, or one principal thing and several inferior things, and bind them well together.' Sometimes there may be a regular gradation, as between the heights of stories in good designs for houses; sometimes a monarch with a lowly train, as in the spire with its pinnacles. The varieties of arrangement are infinite, but the law is uni-

*The Committee beg it to be understood, that while giving free scope to fair criticism, they do not commit either themselves or the Society to the adoption of the opinions expressed by contributors.

versal—have one thing above the rest, either by size, or office, or interest. Don't put the pinnacles without the spire. What a host of ugly church towers have we in England, with pinnacles at the corners, and none in the middle! How many buildings like King's College Chapel, at Cambridge, looking like tables upside down, with their four legs in the air! What! it will be said, have not beasts four legs? Yes, but legs of different shapes, and with a head between them. So they have a pair of ears, and perhaps a pair of horns—but not at both ends. Knock down a couple of pinnacles at either end in King's College Chapel, and you will have a kind of proportion instantly."*

I am really ashamed to read out talk of this kind before a rational audience; but the passage is a good sample of Mr. Ruskin's diction and logic. Here we have "a monarch with a lowly train;" here "a table upside down, with its four legs in the air." Why should not the table stand erect, and the monarch be reversed, so as to realize at once the Herodotean tale of Hippocleides? But the real question is, what have either the monarch or the table, to say nothing of the horses, goats, camels, or hippopotami, which come after them, to do with St. Cuthbert's tower, and King's College Chapel? Herein lies the great force of Mr. Ruskin's style of logic. He puts two things together by an arbitrary juxta-position, and then expects you, first of all, to accept the juxta-position as an analogy, and finally to accept the analogy as an argument. What has a monarch and his lowly train to do with it? Why may I not, in the nineteenth century, erect, if I think good, a thoroughly republican steeple? Why may I not, if I choose, like some of my friends, to symbolize ecclesiastical

* Seven Lamps of Architecture, p. 115.

facts, terminate my tower with the four Doctors of the church, or even with the Twelve Apostles? I cannot, suspect Mr. Ruskin, of all men, of wishing to violate the strictest equality among the latter. Fresh from "the Stones of Venice," I would fain, if any conceivable shape of tower would allow me, crown my edifice with a Council of Ten; will my master require greater pre-eminence to be anywhere assigned than that belonging to the little Doge who tries so modestly to bring himself into notice at the corners of Taunton and Weston Zoyland? What would Mr. Ruskin have done had he lived

> "In lordly Lacedæmon,
> The City of two Kings?"

How would he have designed a rival to the Giralda, in the reign of Ferdinand and Isabel? Again, he tells us, "what, it will be said, have not beasts four legs?" By whom will it be said? Could the idea enter into any man's head but his own, that the legs of beasts could prove anything, either way, as to the beauty of King's College Chapel? I am fully aware that beasts have four legs, just as other members of the animal kingdom have two, six, eight, or a hundred; but I am too blind to see how any architectural principle can be deduced from this most indisputable fact. And as for the beasts "with legs of different shapes, and with a head between them," I much doubt whether the deserts of Africa, or the sculptures of Nimroud, exhibit anything half so marvellous. I must appeal to the Natural History section of the Society to inform me whether any such are to be found in rerum natura. *

* I have since discovered that, if not in nature, they at least exist in art. In Mr. Wilson's Archæology of Scotland, p. 556, an animal is represented exactly realizing Mr. Ruskin's hippogryph or martichoras.

But there is another count against our towers; besides the fault of pinnacles, they have to answer the farther accusation of buttresses! Mr. Ruskin treats us to the following piece of declamation on this subject, which I should be exceedingly obliged to any philological friend to translate into some intelligible tongue of the Indo-Germanic family.

"There must be no light-headedness in your noble tower; impregnable foundations, wrathful crest, with the vizor down, and the dark vigilance seen through the clefts of it; not the filigree crown or embroidered cap. No towers are so grand as the square-browed ones with massy cornices and rent battlements * * * But in all of them this I believe to be a point of chief necessity,—that they shall seem to stand, and verily shall stand, in their own strength; not by help of buttresses nor artful balancings on this side or on that. Your noble tower must need no help, must be sustained by no crutches, must give place to no suspicion of decrepitude. Its offices may be to withstand war, look forth for tidings, or to point to heaven; but it must have in its own walls strength to do this; it is to be in itself a bulwark, not to be sustained by other bulwarks; to rise and look forth, 'the tower of Lebanon that looketh toward Damascus,' like a stern sentinel, not like a child held up in its nurse's arms. A tower may indeed have a kind of buttress, a projection, or subordinate tower, at each end of its angles; but these are to its main body like the satellites to a shaft, joined with its strength and associated with its uprightness, part of the tower itself; exactly in the proportion in which they lose their massive unity with its body, and assume the form of true buttress walls, set on at its angles, the tower loses its dignity."*

* Stones of Venice, p. 200.

Now, in the name of common sense and common English, what does all this mean? If Mr. Ruskin thinks the tower of Magdalen College, or even the western tower of Wimborne Minster, better than Wrington, Titchmarsh, and North Petherton, let him; it is a fair question of taste, on which we may differ quite comfortably; but why all this rant and dogmatism? What is "light-headedness in a tower?" What is "wrathful crest?" could Sir Samuel Meyrick himself have derived any idea from a tower "with the vizor down, and the dark vigilance seen through the clefts of it?" The Glossary fails to inform me what is meant by "square-browed towers," and "rent battlements," unless indeed a tower cannot put in a claim to "nobility" till its parapet has been damaged by a thunder-storm. Finally, *why* is all this? Why cannot our buttressed towers do all these fine things? Why cannot Taunton tower "rise and look forth," &c. &c. though as I do not know the form of "the tower of Lebanon," which I believe the royal lover likens to the nose of his bride, I cannot profess to say which of our Somersetshire types departs furthest from that ideal. To come to the main issue, I can of course only dogmatize back again; if I say "there should be no top-heaviness in your noble tower," I feel quite sure of being right; if I say it should have its "vizor up," though I do not know what that means, I think probability is on my side, inasmuch as I am asserting the contrary to Mr. Ruskin; and I lastly solemnly affirm that what Mr. Ruskin says about "crutches" and "bulwarks supported by other bulwarks," is simply a specimen of his false analogies.

From Mr. Ruskin and his vagaries let us turn to one who does not indeed write about "Lamps," or "Sheepfolds," or "Stones of Venice," but who has an eye to discern, a

pencil to pourtray, a mind acute enough to understand for himself, and capacious enough to tolerate the opinions of others, and who, above all things, does not disdain the natural and appropriate use of his native language. I set up no man's *ipse dixit*, but I always have a peculiar pleasure in finding myself ranged by the side of Mr. Petit. The following is his judgment, as well argued as it is simply expressed.

"This style (the Perpendicular) appears to the greatest advantage in the finish of towers. We know how the Germans avoided the horizontal line in that part of the structure. The sides of a tower or octagon often terminated in gables, and the whole was surmounted by a dome or spire, which was of wood, if the substructure was not capable of bearing one of stone. In the Perpendicular English, on the contrary, the tower was boldly finished with the horizontal line; broken, it is true, with the embattled parapet, and varied with pinnacles, but still without disguise or concealment; for it was felt to form an excellent contrast with the vertical lines of the edifice. The square tower, with its capping of battlements and pinnacles, (I cannot name a better example than that of Magdalen College, Oxford,) is one of the noblest features of Gothic architecture, and is peculiarly our own; nor is it confined to one class of building; the town, the village, the episcopal city, all alike boast it as their chief ornament."*

DIFFERENT TYPES OF TOWERS.

The more elaborate of the Perpendicular towers of Somerset, although forming one great class, may yet easily be grouped under several minor subdivisions. Three

* Church Architecture. i. 208.

Wood & Co. Litht., Taunton

On Stone by T.H. Hair

TOWER BISHOP'S LYDEARD.

great classes very readily present themselves, which I will now endeavour to trace out.*

First Class, Taunton. I will first describe that which is the most usual, and which is employed in several churches of very great beauty, though I must, in my own mind, give it a place below either of the other two. At the same time I will promise in no way, by word or deed, to assault or maltreat any person who may hold a contrary opinion. This type I will call that of Taunton, as being employed in the two stately steeples of that town, of which, as we all know, that of St. Mary Magdalen must, for height and magnificence, claim nearly, if not quite, the first rank in the county. The characteristic of this type, which seems principally to be found in the south, is that the height above the church is divided into numerous stages, and that a staircase turret at one corner, most usually the north-east, is combined with double buttresses at all the four corners, while all the pinnacles are of equal height. Of this type St. James at Taunton, Bishop's Lydiard, Isle Abbots, and Huish Episcopi are noble examples. The two latter I only know from drawings ; but I can answer for the admirable beauty of the two first; anywhere else they would probably rank first among the towers of the district. It shows the wonderful wealth of Somersetshire that we have to place such beautiful structures in the lowest class of merit ; the lowest, of course I mean, among those which make any pretensions to architectural magnificence. St Mary Magdalen, at Taunton, is of this type, but it sins against the first law of tower building, which I conceive to be that there should be a gradual increase of lightness and decoration towards the top. The lower parts

* I am here working out more at length what I have already sketched in my History of Architecture, p. 386.

should be plain and massive; the necessity of a large western window and doorway renders this character only the more necessary on the north and south sides. The stage or stages between the west window and the belfry-stage should hardly have more than single windows; in the belfry they are larger, and double or treble, and the open parapet and pinnacles crown all. The Taunton tower, on the other hand, has double windows, nearly as large as those in the belfry-stage, in the two stories beneath, so that this progressive diminution of massiveness is quite lost. At Bishop's Lydiard, on the other hand, it is beautifully preserved; we have first a stage with a single window, then one with a single window flanked by a niche on each side, finally, the belfry-stage with double windows. This is observed in one face only of St. James's tower at Taunton, a steeple exceedingly like Bishop's Lydiard, and which struck me as surpassing it in dignity, while Lydiard has a sort of grace peculiar to itself. Chewton Mendip I have only seen from the top of a coach, but I should imagine it to be an example of the same class, of greater magnificence than either.

The fault of these towers I conceive to be, that having a distinct staircase-turret carried up the whole height, they do not give it any prominence, but allow it to conceal itself among the buttresses and pinnacles at the corner, and instead of its natural finish of one large pinnacle, assign it only a small battlement, perhaps fringed with diminutive pinnacles of its own. The uniformity of the structure is destroyed, without any proportionate gain in picturesque effect. I therefore venture to assign to this first class the lowest place in the scale.

Second Class, Bristol. The second class is distinguished from the first, by the manner in which it avoids this last

fault; that is, by bringing the staircase turret into prominence, and crowning it with a single large pinnacle, rising above all the rest, so as, I imagine, to exempt this class from the extreme severity of Mr. Ruskin's censure. The same division into stages is preserved as in the former type.

Towers of this class differ much more widely among themselves than those of the former, among which we may observe a similarity approaching, in many instances, almost to identity. This is the prevailing tower in the city of Bristol, and in a smaller and plainer form, it seems common also in the adjoining part of Gloucestershire. Its grandest specimen is of course the magnificent tower of St. Stephen's, which however must quite stand by itself. This tower is remarkable for having æsthetically dispensed with buttresses, those which it has having so slight a projection as hardly at all to influence the general effect. It has indeed almost the appearance of a Gothic version of the old Italian campanile. However this may be, its idea, which is one quite peculiar to itself, though it may not altogether approve itself to our preconceived notions, must be allowed to be, in point of fact, magnificently worked out. I may remark however that one commendation which I have always bestowed upon this steeple is, I find, undeserved, at least by its orginal condition. At present it is remarkable for the absence of top-heaviness, when we consider that it is entirely square, without any receding of any kind. But I find that the present parapet is not a true reproduction of its predecessor; the old one had domical turrets, more like Thornbury, and also small projecting pinnacles, with flying-buttresses at the angles. This last feature is found in some very splendid towers, but I can never bring myself to admire it, as it certainly gives an appearance of inse-

curity to the top of the tower. Of the same general type is St. Werburgh's, and several smaller steeples in Bristol. A famous example of this class is the celebrated tower of Dundry, which I have myself only seen at so great a distance, that for its details I must trust to engravings. It has the same sort of parapet, with open turrets and projecting pinnacles, as Taunton and St. Stephen's; but it is by no means so artistically treated as the latter. The buttresses, being more prominent, require a greater connection with the parapet than they possess—a fault less conspicuous in the square outline of St. Stephen's—and the manner in which the square open turret is set upon the octagonal one which it crowns, seems extremely awkward, though it is, as we shall hereafter see, by no means unparalleled.

These two classes naturally run very much into one another, the only difference being in the degree of prominence given to a feature which exists in both cases. I should consider those only to be pure examples of this second, in which buttresses are entirely absent from the corner occupied by the staircase-turret, so as to give the latter its full importance. It is no wonder then that we meet with an intermediate class, in which the turret stands out much more boldly than in the first class, but still has not entirely dispensed with the buttresses at that angle. Such I conceive to have been the famous leaning tower of Temple church in Bristol, one whose appearance is now ragged and unpleasing, but which, when its parapet was in existence, and before its other ornaments had crumbled away, must have ranked as quite the second steeple in the city. Here I can only conceive that the turret would have been crowned with a single large pinnacle; but still its lower portions are very much cloaked by buttresses. At

WRINGTON CHURCH

Banwell and Cheddar are noble towers of this kind, where the turret stands out very prominently, and its pinnacle soars above all the rest; but still a buttress and pinnacle, like those at the other angles, creeps up by the side of it. In fact, the only difference between these and some of the first class consists in the finish of the corner turret. Thus the very stately tower of Weston Zoyland has lost its pinnacles; if in any work of restoration, one large pinnacle should be clapped on the turret (which, however, does not seem to have been its original finish) it would at once be classed with Banwell and Cheddar. The tower at Bleadon, to judge from the engraving in Rutter's Somersetshire, seems to bear some resemblance to Banwell, but must be very inferior. It has diagonal buttresses, and the stage below the belfry is blank. The engraving does not show whether there are any buttresses at the turret angle or not, but I should think there hardly could be.

I am obliged to place this second class higher than the first in the scale of architectural merit, as it certainly marks a higher style of art, to bring forward into æsthetical prominence any feature which really exists, and to treat it accordingly. But I must confess that the actual examples of the first please me much more. St. Stephen's is, after all, rather wonderful than pleasing; none, in fact, of the Bristol towers have any thing of the exquisite grace and delicacy of Bishop's Lydiard. Banwell is indeed a most beautiful tower, but the general character of its composition approximates much more nearly to Lydiard than to St. Stephen's.

Third Class, Wrington. I now come to the third class, which, to my mind is immeasurably superior to either of the others, whether in ideal merit or in actual magnificence of effect. It is a small class, and differs widely from the other two, which may indeed be ranked together in oppo-

sition to it. In both the former classes, the portion between the roof of the church and belfry stage is generally divided into horizontal stages, which have no necessary connexion with each other, and any of which we could conceive being removed with no other prejudice to the tower than simply making it lower. This may be seen very remarkably in the tower at Middlezoy; this is one of the Taunton and Weston Zoyland group, and has quite the same general effect; but, as it stands on higher ground than its neighbours, it was not thought necessary to give the tower itself the same height; consequently there is only one stage between the west window and the belfry, without any other change in the general composition of the steeple.

We may also observe in most specimens of the two first classes a certain weakness in the pinnacles, which seem hardly of sufficient consequence to form the crown of the magnificent structures on which they are placed; while in the few exceptions they are often topheavy, as at St. Mary Magdalen, Taunton. There is also in many cases hardly any connexion between them and the pinnacles, so that the whole parapet seems something altogether extraneous, merely put on, without in any way growing out of or being fused into one whole, with the stages beneath. This third class avoids all these deficiencies, and works up the whole tower into the most perfect unity that can be imagined.

Its ideal form may be thus described. The staircase-turret, as any important æsthetical feature, is entirely dispensed with, being only carried up a little way above the roof of the church, and then finished off under the belfry-stage. The whole portion of the tower above the church is thrown into one vast stage, panelled with two

enormously lofty windows, transomed at proper distances, and with such portions as are necessary pierced for light and sound. This stage is recessed between two flat square turrets or large pilasters, against which the buttresses are finished with their pinnacles just below the parapet. The pilasters are carried up and crowned with spires, forming four magnificent pinnacles to the whole tower, and rising as the natural finish of the pinnacles below. This glorious idea, which I have no hesitation in ranking among the very highest achievements of architectural genius, I have as yet seen completely realized in two cases only, Wrington and St. Cuthbert's at Wells. Of these two I think Wrington may fairly claim the first place, and is therefore probably entitled to the designation of the finest square western tower, not designed for a spire or lantern, in all England, and therefore possibly in the whole world. In comparing it with St. Cuthbert's, we may not only remark a greater degree of a certain indescribable grace, but may point out some definite features in which I think it cannot fail to have the superiority assigned to it. St. Cuthbert's, equal, as I should imagine, in positive height, is more massive in its proportions, and its corner pinnacles are, to my mind, a trifle too large—a fault, however, quite on the right side. I cannot but think that, if a small portion of their elevation had been taken into the general mass of the tower, it would have been a decided improvement. Again, the parapet at Wrington, flat and beautifully pierced, is, in my opinion, decidedly preferable to the battlement at Wells, and is further enriched by the small pinnacles running up between the windows. Had these been absent, the battlement would have been preferable, as the horizontal line must be broken somehow; but these pinnacles, while effecting this, allow the actually more graceful form of

parapet to be employed. Again, the belfry windows at Wrington gain much, from their threefold division by a second transom, while at Wells there is only one. On these grounds, therefore, I give Wrington the first place; but St. Cuthbert's need not be ashamed at being placed second after such a rival.

The same general idea is to be found in St. John's at Glastonbury, a steeple whose size gives it a still greater magnificence of general effect than either Wells or Wrington, but which, on minute critical examination, must be content with the third place. Its height is so great that the whole space above the roof could not be converted into one panelled mass; there are therefore two distinct ranges of panelling, which takes away something from the intense effect of unity which distinguishes the other two; at the same time, this being so, it would have been better if the lower range had assumed more of the character of a quite distinct pair of windows than it has. It is, in fact, a confusion between the notions of one and of two stages. Again, the slope of the buttresses may be considered too great, and they certainly finish too low down, so that the connexion between them and the great pinnacles is much less close than in the other two. These pinnacles again are somewhat squat, and the small spires rise out of projecting battlements—an arrangement far less elegant than the beautiful canopy work at Wrington. Finally, the small projecting pinnacles and flying buttresses produce the same general effect of top-heaviness which I have already mentioned in St. Stephen's.

These three are the only pure examples of this class with which I am acquainted, and I hesitate not to call them by far the grandest square western towers that I have ever seen or heard of. Next to these may come the noble

tower of North Petherton, which is indeed honourable among its fellows, but which attaineth not unto the first three. This steeple will not come exactly under any of our heads, but certainly has most affinity with this third and noblest class. In like manner with them its staircase-turret finishes below the belfry-stage, but the portion above the roof does not form one panelled mass, but is divided into two very large stages. The belfry windows are large and double, with some remarkable pierced panelling in a square frame over them. There are unfortunately no flat turrets, so that the parapet has little connexion with what is below, and altogether there is a great air of squareness and sharpness about the belfry-stage. There are eight pinnacles, as at Wrington and Glastonbury ; perhaps it would have been better had there been a greater difference in size between the principal and the subordinate ones.

I will conclude this part of my subject by noticing the tower of Portishead, which remarkably combines the characteristics of the second and third class. In this case we may remark, by the way, that the solitary aisle is prolonged nearly to the west face of the tower, quite contrary to the usual Somersetshire practice. It is a much plainer tower than any that I have yet mentioned, having only single windows in all the three stages above the roof, and these diminishing in length towards the top. We may therefore pronounce, without hesitation, that the otherwise very beautiful west window of five lights is too large for its position. The parapet resembles Wrington, and the great pinnacles, which have something of the same character, but are less elegant, are closely connected with the buttresses, but in a different manner. A staircase-turret, crowned with a somewhat larger pinnacle, occupies the north-east angle. This turret is square at the base, and becomes octagonal at

about the height of the church, much as at Dundry—a tower with which Portishead has a good deal of affinity, except in the parapet. It strikes me that, when such a turret is introduced, its predominance over the other pinnacles should be greater than it is in this case. But my own view, in direct opposition to Mr. Ruskin's, is very decidedly that this form is only adapted to an inferior class of towers, those of the merely *picturesque* kind; and that in structures of the real architectural magnificence of Wrington and Glastonbury, their designers judged right in making all their pinnacles on a level. I have no recondite argument about the legs, horns, or tail of any creature wherewith to support this view; I can only put it forth as my own view, for which I claim no greater respect, even from those least acquainted with the subject, than the sort of confidence which I am myself always disposed to give to the tact and experience of those who have given attention to any subject of which I am myself ignorant. The tower of Backwell church, which I know only as forming the frontispiece to Barr's Anglican Church Architecture,* may also perhaps be considered as presenting a feeble approximation to the third class, inasmuch as the pinnacles are connected with the buttresses in something like the way described. But the strange and awkward shape of the belfry windows, a broad ogee arch, with its apex piercing through the parapet, deprive it of all real resemblance to Wrington and St. Cuthbert's.

CHARACTERISTICS OF THE TOWERS.

Though we have thus found considerable diversities among the Somersetshire towers, yet no observer can

* I have since passed by it, but without having been near enough for any examination.

fail to remark a very strong family likeness among them. There is a sort of character by which it is not hard to recognize them; there is a great similarity in proportion, and there are also several points of detail which most of them have in common. Thus there is in all a great tendency to panelling in the form of windows, those portions which are requisite being pierced for light and sound; so common is this that, in speaking of windows in a Somersetshire tower, one must generally be understood to mean panelled designs of this kind, partly blank, partly pierced. Panelling not thus grouped into window-patterns, such as we see at Cirencester, Wolverhampton, or St. Margaret's, Leicester, —all noble towers, but not resembling any Somersetshire model—is by no means common. There is however a great deal of surface ornament in the way of decorative canopies and pinnacles, a mode of enrichment used lavishly at least as early as the tower at Redcliffe; and it has often struck me that, in the method of its treatment, the skill of the Somersetshire architects is admirably displayed. No one who has admired at a distance the magnificent outline of the great tower of Gloucester Cathedral can have failed to be disappointed on a nearer examination at the frippery appearance produced by the excess of ornament of this nature; the decorations look as if they were nailed against a plain wall, and had nothing further to do with it. Now somehow or other the Somersetshire architects have contrived to avoid this fault in the use of the very same kind of decoration; perhaps partly by always keeping it in subordination to panelled spaces; whereas at Gloucester there are no such spaces except the windows themselves, which, being of small size and deeply recessed from the surface, look like insignificant apertures in the canopy-work. Another peculiarity is the frequent use of

patterns of stone-work between the mullions, instead of the ordinary louvre-boards. This we find as early as the Decorated octagon at North Curry. The buttresses in the best towers are also almost invariably double, and placed at a little distance from the angles; the diagonal buttress is chiefly confined to towers of smaller pretensions and, strange to say, to central towers, where it seems least of all in place. Pinnacles are not uncommon on the set-off of buttresses at various heights. When we come to consider the influence of Somersetshire upon the neighbouring districts, we shall find that some of these features are common to the Somersetshire towers and those which seem to be imitated from them, while others seem distinctive, or nearly so, of the model region itself.

I cannot help contrasting with the towers of Somerset, one of the noblest that I know in a region where they cannot be supposed to have exerted any influence, and a view of which may perhaps help to show how closely, with all their differences, they hang together as members of one great class. I allude to the tower of Titchmarsh Church, Northamptonshire, remarkable as the only tower, of any consequence, in that county, standing by itself and not supporting a spire or lantern. It at once strikes the eye as something altogether different from any of the Somersetshire classes. The treatment of the buttresses, flat turrets, and pinnacles, may indeed, to a certain extent, recall the type of Wrington and Wells, but the resemblance is exceedingly slight, as the distinctive mark of the small pinnacles carried up in a larger one is absent. The arrangement as used at Titchmarsh is very common in Northamptonshire. In other respects there is no resemblance to any Somersetshire type. The proportions are far more massive, and far greater distinctness is given to the

stages; Taunton or Lydiard appears by the side of it hardly a less complete unity than Wrington itself. This distinctness is partly effected by bands of panelling, for which there is Somersetshire precedent at Huish Episcopi, but much more by the general character of the design. There are no surfaces panelled in window patterns; only the windows themselves, with all their tracery pierced, and no stone work between the mullions. There is no pinnacle or canopy work at all. We may remark that in Somerset the decoration is more equably disposed over the whole design, while in this of Titchmarsh it, so to speak, lies thick in patches, leaving a large portion of the surface quite plain.

SMALLER TOWERS.

In arranging the towers in their several classes, I have of course chiefly had an eye to those remarkable for their size or magnificence. But a visitor to Somersetshire will be grievously disappointed if he expects to find every parish supplying a rival to North Petherton or Weston Zoyland. I have already alluded to the octagonal type of different dates, and to the very plain towers of earlier date, or at least nowise affected by the general Perpendicular style of the county. But besides these there are a good many small and comparatively plain Perpendicular towers which evidently pretend to some imitation of their more stately neighbours. Thus Churchill and Locking towers are respectable structures, chiefly of the Banwell type; Kewstoke is a still smaller specimen of the more distinct Bristol class. So at Crowcombe and Lydiard St. Lawrence are small towers which evidently stand in the same, or perhaps a rather more distant, relation to Taunton and Bishop's Lydiard. At Burrington and Portbury are still plainer Perpendicular towers; the former indeed without pinnacles

or any one Somersetshire peculiarity. All these, it may be observed, have diagonal buttresses. The tower on the Tor Hill at Glastonbury has buttresses more like the usual kind, but has a mere plain battlement, and is otherwise very anomalous.

SPIRES.

Of perfect spires, I imagine the number to be exceedingly small; I have myself only seen Congresbury and Bridgwater,* thereby shewing how much less keen my vision must be than that of Mr. Macaulay's† ideal stranger in the days of "King Monmouth" who when he "climbed the graceful tower of St. Mary Magdalen, owned that he saw beneath him the most fertile of English valleys. It was a country rich with orchards and green pastures, among which were scattered, in gay abundance, manor-houses, cottages, and *village spires*." And the remark I am next going to make will, I think, tend to show that their loss is not to be laid to the charge of Kirke's Lambs or the Bloody Assizes. There is to be seen in Somersetshire and Gloucestershire, a remarkable class of *imperfect* spires. I only actually know of five, St. Mary Redcliffe, Yatton, Minchinhampton, one in Gloucester, and if my memory does not greatly deceive me, Shepton Mallett; but these five, in a region where spires are comparatively uncommon,

*I have since seen another, Worle. I am obliged to the Editor for a list of eight others, Frome, Whatley, Doulting, Croscombe, Chiselborough, East Brent, Stokecoursey, and Pitminster, the last of which, it seems, is a graceful and conspicuous object in the view from St. Mary Magdalen. If his wider observation can supply only this small number, even supposing the list is far from exhausting the whole county, the number still remains exceedingly small, as compared not only with the counties of Northampton, Leicester, or Lincoln, but even with Gloucester and Oxford, where the spire is far less general.

†History of England, i. 581.

certainly point to a localism of some kind, when they are set against the fact that among the countless spires which I have seen in Northamptonshire and Leicestershire I have only met with one similar instance. This is at Naseby, and the local tradition is that it was mutilated at the time of the battle. In the other cases it would require local information in each case to discover whether the spire was left unfinished, or has been subsequently destroyed. I believe St. Mary Redcliffe is generally attributed to the former cause, and Yatton to the latter. In any case it is remarkable, especially when compared with Northamptonshire, where, as far as I have gone, an unfinished spire is unknown; and, in the numerous cases where a spire has been destroyed, the work, with the single exception above mentioned, seems to have been done much more effectually. In the case of Redcliffe, I cannot help thinking that, if the builders intentionally left it unfinished, they knew very well when to leave off. In all designs and models for its completion, the spire looks awfully too high for the tower on which it stands, while in its present mutilated state it presents a slight approximation to the noblest finish of all, the glorious crown of Fotheringhay and St. Ouen's.

Worle Camp.

BY THE REV. F. WARRE.

THE magnificence and beauty of our mediæval structures are so striking, the remains themselves so important, and so suggestive of all that is dear to the poet, the historian, and the ecclesiastic, that no one can wonder at the growing fondness for them, which is one great characteristic of the days in which we live. Who can pass the ruins of a stately castle, its Norman Keep still looking down in stern majesty on its external defences, without figuring to himself the proud baron, who, surrounded by his foreign soldiery, exerted a despotic and too often tyrannous control over the conquered Saxons, and built these towers, within whose walls he might laugh to scorn their attempts at resistance or revenge? Who can contemplate the more elaborate and scientific fortifications of the Edwardian period, without recalling the gallant days of chivalry, and peopling the ruins with good knights and true and noble ladies, whose matchless charms inspired their daring valour? Who again can view such a cathedral as Wells, or wander through such ruins as those of Glastonbury, and not see in imagination the gorgeous procession, the splendid vestments, the attending

PLAN OF

WORLE HILL ENCAMPMENT

WITH ITS

OUTWORKS.

E. MARTIN ATKINS.

1852.

Webber Lith.

BRISTOL CHANNEL.

Reference

- Walls
- Trenches
- Hut Circles
- Those opened
- Platforms, supposed for Slingers

Proposed line of Pier leading to Birnbeck Island

Spring Cove

Road leading to Lew to ke

Quarry

Lime Kiln

chor Head

Part of Uphill Bay

0 100 200 300 400 500

Feet

0 1 2 3 4 5 6 7 8 9 10

Chains

bands of priests and monks, and hear the solemn chant and pealing anthem, while the bishop or mitred abbot presides at the celebration of some magnificent office of religion? Indeed, while fierce wars and faithful loves—while the remembrance of all that is exciting and picturesque in history and romance,—are interesting; while reverence for things holy, and admiration for things beautiful, survive, the stately castle, the solemn minster, and the ruined abbey, cannot fail of obtaining that attention, which except by the most obtuse dullness, or the most egregious bad taste, could never have been denied them. But there are other remains of by-gone days, more ancient and more mysterious than these, compared to which the Norman castle, the cathedral, and the abbey, are things of yesterday, their inhabitants as men of modern days, and their uses and origin plain and well known. These remains have not the charm of architectural beauty, nor the associations of chivalry, to recommend them to our notice. No common ties of religion exist between us and those who raised those earthworks, which we see on the barren down or the bleak hill. And yet to one who, like Wordsworth's traveller, has seen the hills grow bigger in the darkness, these monuments of nations whose political existence closed when the written history of this country began, possess a fascination little, if at all, inferior to those of later days; and their extreme antiquity, and the mystery attached to them, fully make up for the want of those charms which draw the attention so forcibly to the remains of mediæval structures, whether military or ecclesiastical.

On Worle Hill, to the north of the town of Weston-Super-Mare, exists one of the most remarkable and mysterious of these relics of antiquity that I have anywhere seen; to describe which, and, if possible, to shew what it

really was, is the object of this paper. But though it is the proper office of the archæologist to clear away obscurities, I fear there is little doubt that when he has done his best with regard to a fabric which has most probably existed for more than two thousand years, there will be quite enough left to satisfy the most imaginative mind, that ever took the unknown for the wonderful. The military works of the Romans, as well as the roads which they laid down, wherever their dominion was established, were constructed on a scale of such grandeur and durability, that many of them have survived the lapse of sixteen or seventeen centuries, and still bear witness to the power and enterprise of that wonderful people; while the bloody ravages of the Danes hold so conspicuous a place in the early annals of this country as not only to be recorded in real history, but in many cases to have come down to us in the less certain form of local tradition. It is not, therefore, a subject of wonder, that these relics of bygone nations have usually been ascribed either to the conquerors of the world, or to those northern pirates whose incursions were for some centuries the terror of the civilized world. But in reality a very little knowledge of history and antiquities will serve to convince us that probably the great majority of these mysterious structures could not have owed their origin to either of these people; though no doubt, when occasion required, they both made use of the fortifications they found ready made to their hands in the countries which they invaded. The rules of Roman castrametation are so well understood, and the rectangular form, with the gates regularly placed in each side, so universally adhered to by that people, that it is hardly possible to mistake an originally Roman camp for one constructed by any of the other races who have held military possession

of this country ; and even where, as in the case of Ham Hill, in this county, the later invaders made use of the fortifications of those who had preceded them, the part which the Roman camp occupied is frequently to be discerned with considerable accuracy ; while the rapid movements of the Danish pirates, and the astonishing rapidity with which they transferred their armies from one part of the country to another, render it improbable that the fortifications with which they surrounded their temporary camps, should have been of any very substantial character. Indeed I believe it will generally be found that those which are undoubtedly of Danish origin, consist of little more than a trench and rampart hastily thrown up, usually taking the form of the hill on which they are commonly placed, and apparently constructed without much attention to any fixed rules either of fortification or castrametation. When therefore we find, as in the case before us, works of great importance and strength, evidently intended for the permanent accommodation of a large force, and constructed on a plan essentially different from what we know to have been that in use with the Romans, we are compelled to conclude that the original constructors of those works were neither Romans nor Danes; and as it can hardly be that a place of such importance, if of Saxon date, should not be mentioned either in the Saxon Chronicle, or by Asser, or indeed I believe by any other author, it follows that we must date its origin before the Roman invasion, and seek for its founders among the British tribes, whether Belgæ or Hædui, who inhabited this district while Britain was as yet altogether divided from the Roman world.

The first inhabitants of this island were undoubtedly a branch of the great Celtic family which appears to have

held possession of the northern and western parts of Europe from the earliest times. But that they were not all of the same branch, though probably sprung from the same origin, is the opinion which the best Celtic historians have adopted, from certain differences in their language, of which I am no competent judge, being profoundly ignorant of the Celtic tongue in all its dialects. Davis, the learned author of the Celtic researches, gives the following translation from the Welsh triads on the subject of the primitive inhabitants of Britain, collected by Caradoc, of Langarvan, about the middle of the twelfth century :—"The three Benevolent tribes of the Island of Britain. The first were the stock of the Cymry, who came with Hu Gadarn into the Island of Britain ; for he would not have lands by fighting and contention, but of equity and peace. The second was the race of the Loegrys, who came from the land Gwas Gwyn, near the mouth of the Loire, and were sprung from the primitive stock of the Cymry. The third were the Britons ; they came from the land of Lydaw, on the coast of Gaul, and were also sprung from the primordial line of the Cymry. Three tribes came under protection into the Islands of Britain, and by consent and permission of the nation of the Cymry, without weapon, without assault. The first was the tribe of the Caledonians, in the north ; the second was the Gwydellian race, which are now in Albany or Scotland ; the third were the men of Galedin, who came in naked ships into the Isle of Wight when their country was drowned. Three usurping tribes came into the island, and never departed out of it. The first were the Coranied, who came from the land of the Pwyl ; the second were the Gwydellian Phicti, who came into Scotland over the sea of Locklyn or Denmark; the third were the Saxons."

Now the very form of these triads is sufficient to prove that they are unworthy of admission into the canon of real history. But this much is certain, that at the time of the Roman invasion, the whole eastern part of the island was inhabited by a people whose language and manners, in some degree, differed from those of the aborigines, who had retired to the interior and the western coast, and that the greater part of Somersetshire was at that time in the possession of the Belgæ—probably a tribe of the Coranied —who came from the land of the Pwyl, who had conquered it from the Hædui, Cangi, and Danmonii, perhaps not very long before the time of Cæsar; or, as Mr. Guest supposes, the men of Galedin, who had repaid the hospitality of the Cymry by taking from them a considerable part of their territory. Now the learned Davis, whose work I have been quoting, supposes that pure Druidism retired, with its original professors, before the invading tribes; and he is certainly in some degree borne out by the fact of druidical remains being far more common in the western districts, such as Wales, Cornwall, and Cumberland, than in the eastern counties; and also by the fact that the great establishment of Druids, in the time of Agricola, was not at their great temples at Stonehenge and Abury, which were then either in the hands of the Belgæ, or close to their border, but in the Island of Mona, the extreme western point of North Wales. Now there are many druidical remains in different parts of Mendip; and I am informed that there is one at no great distance from this place. The same author supposes that the Hædui, who certainly were settled in this country before the Belgæ, were a tribe of the Loegrys; and if so, it is probable that these druidical monuments are of more ancient date than the Belgic invasion; and from the peculiarity of

its construction, I cannot help thinking that the camp on Worle Hill may be of the same very remote antiquity.

Now it is said that Hamilco was sent by the Senate of Carthage to discover the western shores and ports of Europe, as early as 420 B.C.; and that the Islands of Britain are mentioned by the name of Æstryminides Islands, infested by the Æstrum or Gadfly; but Davis states that the same word, Clêr, (which in British signifies Gadfly), also means a learned man or teacher; and that Hamilco probably discovered, not the islands of the Gadfly, but of the Druids. The expeditions of the Carthaginians to the western shores of this island were undoubtedly undertaken for the purpose of obtaining tin and other minerals; and it is certain that the mines of Mendip were worked by the Belgæ before the Roman invasion, and probably before them by the Hedui, or other aboriginal tribes. May it not then be at least possible that the fortifications on Worle Hill may mark the site of a town inhabited in times of extreme antiquity by persons connected with this traffic, and that from them the primitive Britons may have looked down upon Carthaginian or even Phœnician ships taking in their cargoes of the mineral wealth of Mendip, hundreds of years before the Belgic settlement at Bleadon or the port of Axium were in existence?

That Worle Hill was occupied by something more than a military station, appears probable when we come to examine the remains actually existing upon it, which will I hope, be a more satisfactory employment than guessing at their date and origin. Of this very remarkable fortification Mr. Rutter, in his delineations of Somersetshire, gives the following account: "Worle Hill is an insulated ridge, about three miles long, but not more than a furlong

in breadth, and includes a view of not less than thirty churches from its elevated summit; the western end projects into the Bristol Channel above the town of Weston, and is formed into one of the most remarkable fortifications in England. The length of the space enclosed from the inner rampart on the east, to the point of the hill on the west, is about a quarter of a mile, and the medium breadth is about eighty yards, making an area, as supposed, of fifteen or twenty acres. On approaching the camp from the east, about a quarter of a mile distant from it, is a barrow of loose stones, five feet high and fifteen feet in diameter, which appears not to have been disturbed since its formation. Before arriving at the outer rampart, seven ditches are sunk across the ridge of the hill, out of which it is probable that the stones were drawn which formed the ramparts, besides which, the whole ground, for a considerable distance in front of the camp, is still covered with loose stones. There are two ramparts, about fifteen feet high from the bottom of the ditch, composed entirely of stones loosely placed, without a blade of grass or plant of any kind; these ramparts, with their corresponding ditches, cross the hill in a part where it is about a hundred yards broad, and then, turning westward, are continued as far as the security of the station required. Those on the north are soon rendered unnecessary by the rock, which is there precipitous; those on the south are gradually blended into the natural declivity of the hill, which is nearly as steep as the rampart itself, and like it is composed of loose stones. There is no indication of any building in the area, except a square excavation about five feet deep and seven feet square, the sides of which are built with loose stones without mortar. It has the appearance of the mouth of a large square well, which might have been filled up when the place was aban-

doned. Within the area of this camp are several curious circles, difficult to explain, about twenty or thirty feet in diameter, principally towards the western point, but one is nearly in the centre, composed of separate stones, surrounded by a slight shallow excavation or ditch. On the north side of the camp there is a subterranean passage from the top, through the rock, to the lower part of the hill, which is now almost filled up with stones."

Since this description was written, the trees with which not only the rest of the hill, but unfortunately the area of the camp also has been planted, have grown so much, as to render it impossible to perceive the plan of the fortifications at one view. It appears however to me, to be easily made out as far as the mere fortification is concerned, though the earth works which exist on the south and west sides of the hill have been so much interfered with, and in some parts mutilated, as to present only a maze of inextricable confusion. There can be no doubt that these ramparts were originally not as we now see them, shapeless heaps of stones, but dry walls, erected on the sides of the trenches, from which their materials were taken, and were probably much higher than they are now. This however does not apply to the trenches to the east of the main fortification, where there is no appearance of walls, and which were probably dug to render the level ground on that side difficult to an invading force, while the stones taken from them served to strengthen the fortifications of what I may perhaps be allowed to call the keep of the place, which is a rectangular space, strongly defended on three sides, immediately within the eastern rampart, and divided from the western part of the fortification by a trench cut in the solid limestone. At the south-west angle of this rectangular fortification, we find the traces of the main entrance to the

NORTH WESTERN ENTRANCE WITH FLANKING OUTWORKS, WORLE HILL.

place, which was apparently defended by a strong flanking outwork—whether a tower or no I will not venture to guess—the materials of which lie in a vast heap on the eastern side of the entrance; there appears also to have been a smaller entrance at the north-eastern angle, where the defences are evidently crossed by a pathway. From the western rampart of this part of the fortification, to the extremity of the hill, the ramparts are perfectly evident on the south side, while the precipitous character of the rocks on the north, renders fortification on that side unnecessary. At the north-western extremity there appears to have been a third entrance, defended by an outwork and rampart, and several smaller walls appear to have extended along the south side of the hill. From the great entrance a strong rampart extends to the east, below the principal fortification, to the distance of a few hundred yards, and, turning to the north, crosses the ridge of the hill, to the east of the trenches before mentioned, dividing apparently the main fortification from the sort of outer enclosure formed by a similar rampart, which, having followed the shape of the hill for some distance, turns with a somewhat acute angle, and extends across the hill. The outer entrance to the enclosure appears to have been at the south-west corner, and it seems to have had communication both with the internal fortifications and the level ground to the east, by means of narrow gates in its ramparts. The whole of this extensive fortification is thus divided into four compartments, of which the strongest by far was that to which I have given the name of the keep, from the analogy it bears to that portion of a Norman castle. That extending from the west is also very strongly fortified wherever the nature of the ground admits, while the defences of the eastern enclosures are

not very strong. That between the eastern enclosure and the keep appears to have been purposely made rough, and crossed with deep trenches, in order to render the approach to the rectangular fortification as difficult as possible.

There is one feature of this very remarkable relic of antiquity to which I have not yet adverted; I mean those curious circles of from twenty-eight to thirty feet in diameter, which Mr. Rutter mentions as existing in considerable numbers towards the western extremity of the fortification, and considers them difficult to be accounted for. These, though no doubt many of them have been disturbed and nearly obliterated, by the planting of the area, may still be seen as described by him, and are undoubtedly the foundations of the huts in which the primitive inhabitants of the place resided more than two thousand years ago. Wherever the site of a British town is ascertained, the area of which has escaped mutilation either from tillage or planting, these circles are almost certain to be found. The most perfect specimens of which I am aware, are those on Dartmoor, whose fastnesses offered little temptation to foreign invaders, while the unproductive nature of the soil has preserved them from the ravages of the plough and spade. These primitive habitations appear to have been constructed by forming a circular excavation of a few feet in depth, the sides of which were built up of loose stones, without mortar, and the floor was probably formed of earth or clay trodden hard. These walls appear to have been raised but a small height above the surface of the ground, most likely on account of the instability of dry walls, unless built of far more substantial proportions than these seem to have been. A frame-work of wood seems to have been raised on

them, most likely filled with wattle or wicker-work, or perhaps merely interwoven with brush-wood, and the whole was finished with a roof either of thatch or turf, which might have had an opening in the centre, serving the purpose of a chimney. How these huts were lighted or ventilated it is of course, at this distance of time, useless to enquire.

It is a curious fact that Catlin, in his work on the American Indians, gives a sketch of the site of an ancient Mandan town, (which tribe, from some peculiarity in their language, he supposes to be of Celtic derivation,) representing a place which, if an antiquary were to meet with on one of our hills or downs, he would at once pronounce it to be a British village; and gives the following account of the construction of their lodges, probably not unlike that common among the Celtic inhabitants of Britain before the time of its occupation by the Romans. He says—"Their village has a most novel appearance to the eye of a stranger. Their lodges are closely grouped together, leaving but just room enough for walking and riding between them, and appear from without to be entirely built of dirt; but one is surprised when he enters them, to see the neatness, comfort, and spacious dimensions of these earth-covered dwellings. They all have a circular form, and are from forty to sixty feet in diameter; their foundations are prepared by digging some two feet in the ground, and forming the floor of earth, by levelling the requisite size for the lodge. These floors or foundations are all perfectly circular, and varying in size in proportion to the number of the inmates, or the quality or standing of the families which are to occupy them; the superstructure is then produced by arranging inside of this circular excavation, firmly fixed in the

ground, and resting against the bank, a barrier or wall of timbers, some eight or nine inches in diameter, of equal height (about six feet), placed on end, and resting against each other, supported by an embankment of earth raised against them outside; then, resting against the tops of these timbers or piles, are others of equal size and equal numbers, of twenty or twenty-five feet in length, resting firmly against each other, and sending their upper, or smaller ends, towards the centre and top of the lodge, rising at an angle of forty-five degrees to the apex or skylight, which is three or four feet in diameter, answering as a chimney or skylight at the same time. The roof of the lodge being thus formed, is supported by beams passing around the inner part of the lodge, about the middle of these poles or timbers, and themselves upheld by four or five large posts, passing down to the floor of the lodge. On the top of and over the poles forming the roof, is placed a complete mat of willow boughs, of half a foot or more in thickness, which protects the timbers from the dampness of the earth with which the lodge is covered from bottom to top, to the depth of two or three feet, and then with a hard and tough clay, which is impervious to water, and which with long use becomes quite hard." Now whether the Mandans be of Celtic origin or not, it is interesting to observe the similarity of customs among two nations in a state of nearly primitive simplicity; the one living on the banks of the Missouri in the nineteenth century; the other on the coast of the British Channel, perhaps some centuries before the commencement of the Christian Era; for with the exception of the covering of earth, which on the top of Worle Hill it would have been no easy matter to procure in sufficient quantities for the purpose, the construction of the British hut must have

HUT CIRCLE ON WORLE HILL.

From Nature and on stone by C. H. Fair.

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been very similar to that of the Mandan lodges, and I cannot help thinking it possible that some of those circular barrows which are depressed in the centre, may not be sepulchres, as is generally supposed, but the remains of huts constructed as here described, the earth of which has sunk in when the timber which supported it became too much decayed to sustain its weight. Now the fortified area which I have described, would no doubt accommodate a closely packed population of from fifteen to twenty thousand persons, whose cattle might be tolerably secure within the outer enclosure, while the western extremity of the hill, protected by the massive ramparts of the rectangular fortification, occupying as they do the whole extent of the narrowest part of the hill, would afford an almost impregnable residence for themselves and their families. But it is not likely that the whole population constantly resided within these formidable ramparts; for there are traces of earth-works, and even some of these circles, to be found much to the east of the outer enclosure; and it is most likely that a straggling village at one time extended as far as Kew steps, to the east of which may be traced the remains of another rampart, which seems to have extended quite across the hill.

The very curious pass known by that name is one of the most remarkable features of Worle Hill. It consists of a flight of upwards of two hundred steps, leading from the top of the hill to the little village of Kewstoke, and probably beyond it to the sea, which 2,000 years ago no doubt extended farther on that side than itdoes at present, and I think may safely be pronounced to have been the great landing place of the British town.

A glance at the formation of the hill will serve to show that it would be very difficult to land any where to

the west of Kewstoke. Anchor Head is too small and too rocky, to have been the only approach to a town connected with the Phœnician, or Carthaginian trade, while the beach at Kewstoke would afford a safe and convenient locality for the small craft in use in those days. At the top of the highest slope of this pass may be traced a considerable foundation analogous to those on the hill, though not circular, which I conceive to have been a military work intended to command and defend the most practicable approach from the sea, on this side of the hill. It is popularly supposed to have been the residence of a British or Saxon Saint, of the name of Kew; but I am irreverent enough to consider that this very apocryphal worthy, if indeed such a person ever existed, had no more to do with Kewstoke, than Saint Conger had with giving name to the neighbouring town of Congresbury. Kongar means King, and Bury signifies town. I believe the large wood in the neighbourhood of Congresbury is still called Kingswood, and that the name of the place translated into English, is simply Kingston; in the same way Kewch is Celtic for a boat, and Stoke means station; and Kewstoke signifies the station of the boats, which I believe were much more likely to give a name to the village and the stairs than any saint, whether real or imaginary.

I feel that I ought to apologize for the length to which I have extended my gropings in the dark, but I am sure that now I have done my best, or my worst it may be, to clear up the history of Worlebury Camp, I have left obscurity enough to satisfy, as I have said before, the most imaginative mind that ever took the unknown for the wonderful.

Since this paper was read, the following discoveries have been made within the area of Worlebury Camp, chiefly under my superintendence. Having obtained permission

from Mr. Pigott, the owner of the property, I commenced my labours on Thursday, October 16th, by clearing out a square space where there was the appearance of dry walls, thinking it possible that it might be the entrance to a well; in this however I was disappointed, as it turned out to be a rectangular excavation in the rock about sixteen feet long from east to west, and about thirteen from north to south; having a facing of dry masonry on the north, east, and west sides, that on the north about two feet eight inches in height, the other two sloping to the south with the natural declivity of the hill, the south side being only the natural rock without any facing of masonry, and only a few inches deep. The floor is composed of the solid limestone of the hill, and seems to have been very imperfectly levelled. For what purpose this chamber was constructed I cannot form a conjecture, at first I thought it might be a tank for water, but the floor being of mountain limestone, renders this improbable. On the following day I proceeded to clear out one of the hut-circles, of which there is a great number within the ramparts. It proved to be a rude excavation in the solid rock about six feet deep, and rather more in diameter, and with the exception of a few fragments of very coarse pottery, and a little wood having much the appearance of charcoal, contained nothing of interest. On the next day I was unavoidably absent, but the work was continued under the superintendence of Mr. Atkins, Dr. Tomkins, and Mr. Bailward, and on clearing a similar hole, at about five feet six inches below the surface of the ground, was found a skeleton lying on the right side, with the head to the north west. This skeleton, though in a very decayed state, was nearly perfect with the exception of the lower part of the legs, which had disappeared. On cleaning the scull three cuts entirely penetrating the bone,

and evidently inflicted by some heavy and very sharp weapon, were discovered; the collar bone and the left arm, a little below the shoulder, also bore the marks of severe wounds, apparently from the same cutting weapon; there was nothing else of interest in this hole. On Monday however, on opening another circle very near this, at the depth of three feet six inches from the surface, they found the rock faced with dry masonry in a nearly circular form. From the top of this masonry to the solid rock at the bottom, was on the east side twenty-three inches, on the west twenty-seven, on the north twenty-four, and on the south twenty-three; the diameter of this circular chamber was in the broadest part four feet six inches, and in the narrowest, three feet eleven inches, the total depth of the excavation being about five feet six inches. About four inches below the top of the masonry were discovered the remains of two skeletons, lying almost across each other, the head of the upper one nearly south, and that of the lower west-south-west; they were lying on their sides, with their legs drawn up. About six inches lower a third skeleton was found, the head lying nearly due north. One of these skeletons bore marks of great violence, the skull being gashed with a sharp cutting instrument, and fractured by a large stone which lay upon it; part of the collar-bone was driven up into the arch of the under jaw, and the left thigh was severely wounded. Under this skeleton was a quantity of dark mould, then a layer of broken stones, then thin plates of lias, a stone not found on Worle-Hill, under which, immediately upon the rock, was a quantity of wheat mixed with a little barley, quite black, but whether from the action of fire, or from decay, is not certain. With the skeletons were a few horses' teeth, and mixed with the grain some

small bones, apparently those of birds. During the remainder of the week several other circles were opened, in most of which were found small fragments of coarse pottery, bones of various animals, some of which appear to have been burnt, pieces of blackened wood, but no masonry or anything of much interest. The deposits in all are nearly the same; first, earth washed from the surface; then, rubble and pieces of rock, to the depth of about five feet; then, black earth, with fragments of wood; then, broken stones, and, lastly, the solid rock.

On Saturday was found the skull of a pig, the back part of which, being close to the rock, showed that it must have been separated from the carcase before it was deposited in the hole; with it were many fragments of coarse pottery, some blackened wood, and a small piece of spar, which appears to have been rubbed down at one end, and might perhaps have been used as the head of a small arrow. In the early part of the week, a large circle of fifty feet in diameter, occupying nearly the centre of the place, was searched, but it proved to be merely superficial, the solid rock being but a very few inches below the surface. Near the centre of this circle were found many fragments of pottery, of very coarse and rude texture. On Monday, the 27th, we found some coarse fragments of pottery, bones of various animals, and a piece of spar similar to that before mentioned. On Tuesday, at about five feet from the surface, we found the jaw of a pig and a few bones, and a little lower a human under jaw, the atlas vertebra, the bones of one arm and hand, and those of the right foot, in a very perfect state. This hole was not nearly so dry as most of the others, and those bones only were preserved which had fallen in the least damp spots ; enough however remained to shew that

the skeleton was lying on its face ; and about eight or nine inches below the jaw, lay an iron spike about four inches long, which appears to have been the head of a dart or javelin, with which weapon the man might have been killed, and have fallen forward into the excavation. Under the skeleton was the usual deposit of black mould, and pieces of stick, such as might have been used in the construction of a wattle roof, under which was a large quantity of wheat and barley, which seems to have rested upon a flat board, the two sorts of grain having been kept separate from each other by thin pieces of wood placed between them. With this grain was found a small piece of what I at first thought to be a coarse straw plait, but which, on closer inspection, appeared to be part of a sedge mat, or perhaps basket, in which the grain might have have been kept. The investigation of this curious store was not completed till Thursday, when another excavation was opened. In one corner was a ledge of rock, which might have served as a seat, on the left side of which were the fragments of a large earthen vessel, and on the right a small store of grain. Near the bottom of this hole was found part of a very small ring, apparently of bronze, and quite down on the floor, almost forced as it were under a projecting ledge of rock, apparently put away with great care, two rings of iron about an inch in thickness, and about the same in diameter. On Friday nothing was discovered, but on Saturday, in the last circle which has been searched, we found many bones of animals, a good deal of broken pottery, and just above the floor a piece of iron about eight inches in length, which, though quite rusted through, appears to be the head of a large spear. Besides these remains, we have found a great number of pebbles, all nearly of the same size, which, as the hill is nearly

three hundred feet above the sea, must have been brought there on purpose; and many pieces of red earth, apparently containining ochre, one of which appears to have been rubbed down into the form of a small egg.

Now the question naturally arises,—to what date and to what people are we to ascribe these curious relics of antiquity? and though we have as yet made but small progress in our investigations, I think we even now possess data sufficient to justify us in hazarding a guess; for a mere guess at present it must be, as to both these points. I am inclined then to think, that they are relics of two distinct dates, separated from each other by an interval of several hundred years. From the extreme coarseness and rudeness of the pottery, as well as the state of almost decomposition in which, while wet, some of it appeared to be, I am inclined to think that the greater part of it, together with the iron rings, (which were found put away with great care at the very bottom of the corner of one of the excavations, and the use of which, unless they were analogous to the ring money, which we know to have been in use before the introduction of coin, it would be difficult to understand,) are the relics of the early inhabitants of the place, whether Hædui or Belgæ, and more ancient than the time of the Roman invasion. As far as I can judge, with the exception of one very diminutive fragment of black ware, nothing has been found in the slightest degree indicative of Roman occupation; not a fragment of brick, not a single coin, have we met with; from which I conclude that the place was deserted from the time that Ostorius Seapula took military possession of the country from the Avon to the Parret, in the reign of the Emperor Claudius, —that the British inhabitants, reduced to slavery by their conquerors, and having learned to construct better habita-

tions than subterranean huts, had left Worle Hill for Axium, on the other side of the bay; and that their original habitations, having fallen into decay, soon became open holes, the wattle or brushwood roofs of which, having fallen in, afforded the material of the layer of dark mould mixed with pieces of stick, which we have almost invariably found in every one we have opened.

In the course of four hundred years, under the Roman tyranny, the Britons became a degraded and enslaved, though highly civilized people; nor, if we may depend upon the lugubrious history of Gildas, was their situation much, if at all, improved under their own chieftains after the departure of the Romans from their country. On this miserable, though civilized and christian people, the flood of Saxon invasion burst like an overwhelming torrent, and a contest for life and death took place between the invaders and the Bretwallas, or British Welsh, as they are called in the Saxon Chronicle, which raged through the greater part of the fifth and sixth centuries. At length, in the year 577, Ceawlin, the West Saxon conqueror, overran this part of England, gained a great battle at Dyrham, slew three British chiefs, Conmail, Farinmail, and Condidan, and took the cities of Bath, Gloucester, and Cirencester. Now one of the skulls found, bears the marks of wounds such as no Celtic weapon that I have ever seen, could have inflicted; nor is the short stabbing sword of the Romans at all more calculated to give such awful gashes, while the Saxon broad sword is the very weapon for the purpose.

Again, neither the primitive Britons, nor the early Saxons, were slaves; but the Romanized Britons were reduced to the most abject servitude; and, as I have before said, their situation was but little improved after the departure of the

Romans. Now the cartilage between two of the lumbar vertebræ of one of the skeletons discovered, (evidently not of an aged person,) is ossified, which I am informed could hardly have been caused in a person of no great age, except by toil so severe and constant, as to render it probable that it is the skeleton of one who worked under the lash of a task-master. In the south rampart, there is an evident appearance of a breach, and at no great distance from it these skeletons were discovered. It seems therefore to me not improbable, that some of the unhappy Romano-Britons, in the year 577, took refuge in this stronghold, and that the corn and pigs may have been part of their slender stock of provisions; that the place was taken by storm, and that in the desperate contest which ensued, some of the slain fell into the open holes which marked the sites of the primitive huts, and their bones being in some degree sheltered from the weather, have been preserved to the present time, while those left upon the surface have yielded to decomposition and entirely disappeared, that in the lapse of twelve hundred years, the holes have, partly by accident, and partly by design, (when in later days the hill became a sheep walk,) been filled up with earth and stones, till the only vestiges remaining of them, are the low circular mounds and slight depressions which are found in such numbers within the area of the fortified town, a few of which have now for the first time been explored.

Lullington Church.

BY THE REV. D. M. CLERK.

THE small church which I am about to introduce to the notice of the members of this society, is that of the parish of Lullington. It is situated in the county of Somerset, and diocese of Bath and Wells, in the archdeaconry of Bath, and the deanery of Frome, from which latter place it is distant three miles, in a northerly direction. The river Frome, waters the lower part of the parish.

Lullington is mentioned in the Domesday Survey, under the name of "Loligtone," and appears to have been granted by the Norman Invader, to the bishop of Coutances. It was held in the time of Edward the Confessor, by Earl Harold, and stated then to have been worth £4; but in the time of William the Conqueror, 100 shillings. Afterwards the manor, with the advowson of the church, (held of the duke of Lancaster, as of the manor of Trowbridge,) was conferred on the priory of Longleat, in the county of Wilts. At the dissolution of that priory, (29 Henry VIII.) it was granted to John, prior of the Carthusian monastery at Hinton, in the county of

Somerset; but the succeeding prior ceded it to the king, who, in the thirty-second year of his reign, (1541) granted it to the earl of Hertford, who the next year (1542) sold it, with the Longleat estate, to Sir John Thynne, from whom it descended to the late Thomas, Marquis of Bath, and has now passed into the hands of the proprietor of the neighbouring park of Orchardleigh, — Cox, Esq. The present incumbent is the Rev. W. M. H. Williams.

The CHURCH which we are describing, is one of those puzzling and curious buildings which have the tower between the nave and the chancel, without any visible signs of transepts. Its ground plan consists of a Nave, a Tower, and a Chancel, with an aisle, transept or chantry, (as you may please to call it,) on the South side, with a South porch adjoining the chantry, west of it; the chantry and porch together filling up the whole length of the nave on the south side. The length of the nave, is twenty-five feet six inches; the tower, twelve feet three inches; the chancel, seventeen feet ten inches, altogether making the length from the inside east, to the inside west wall, fifty-five feet seven inches. The width of the nave, is seventeen feet two inches; that of the chancel, is rather greater, seventeen feet ten inches. The width under the tower, is twelve feet; the chapelry or aisle is nearly square, viz., fourteen feet, by fourteen feet three inches.

The whole of the CHANCEL (I begin at the East, following the Camden scheme in my description,) appears to have been added during the Decorated period; probably not much later than 1320, A.D. The Eastern window is of three lights; the centre light is pointed, the other two with circular heads, and each with three foliations. On the inside, the head of the window arch is finished off very prettily, with a moulding which loses itself in the wall

just where the arch stops and the jamb begins. In the furniture of the chancel there is nothing remarkable. There is a piscina, with a trefoiled orifice and no shelf, but of poor workmanship. On the North side is one good decorated window, with a square head. On the South side there are two windows, the one square-headed, and corresponding with that on the North side ; the other a small one of two lights, and of plain Decorated character. The wall in which this window is inserted, projects six inches beyond the face of the other portion of the wall, and may have been a part of the old Norman building. The width of this window is only two feet nine inches to the outer edge of each splay, and the height is four feet nine inches also to the edge of the splay, which splay (wide, not deep,) is about nine inches all round. The keystone has apparently dropped, which makes it appear as if it were a round-headed arch. This window I consider to be very curious ; I know not what to make of it, nor what was its use.

The Piers which support the tower towards the chancel, are Norman, but they do not correspond, singular to say, the one with the other. That on the north side, is adorned with three shafts, while the pier on the south, has only two. The capitals of the principal shafts, are rather more ornamented than the other, but all of them may be described as *plain*. The third shaft on the north side therefore, stands out from the wall at present, supporting *nothing*. As to whether or not the wall was originally thicker and cut away, together with the shaft on the South side, I will not undertake to decide; but this appears to me the most probable solution of the matter, from the circumstance that the *arch* which both piers support, is pointed ; and there is on the south side, close to the pier, a doorway

TOWER ARCHES, LOOKING EAST.

LULLINGTON CHURCH

leading into the staircase turret, which doorway and staircase are of far more modern construction. The arch from the tower to the chancel, is much earlier,—so much so, that, were it not for the corresponding arch into the nave, (which I shall presently describe,) it might admit a doubt whether it were not the original construction. I am myself inclined to place it in the Early English period, towards the Decorated era.

The arch into the nave is good, and very singular. It has but few mouldings, and is pointed. On each side, portions about three feet from the pillars on the nave side, are carved with Chevron ornament, and this ornament stops (in my opinion) as if the crown of the arch had once been *round*, and altered from *round* to *pointed*. The piers which support this arch, are very similar to that under the south side of the chancel arch, the secondary shafts being twisted. One, (the south-west shaft) was restored very fairly about twenty years ago.

The south aisle, or chantry, is separated from the nave by a very good plain chamfered *late* Early English arch, verging on Decorated. The piers, or rather pillars, which support it, are very good, the capitals boldly carved with foliage. The shafts touch the wall, but are separate from it. There is one pillar only on each side, of dimensions well proportioned to the size of the arch, and the weight of capitals it has to bear. The East window of this aisle is good, with a drip or string-course round it, which is stopped by a corbel on the North side; that on the other side is gone, if there ever was any. The window is of two lights, connected at the top by a quatrefoil circle; the two long lights have no foliations. I should suppose its date (and in fact that of the whole of this part of the chantry) to be about 1280, A.D., earlier, by some thirty

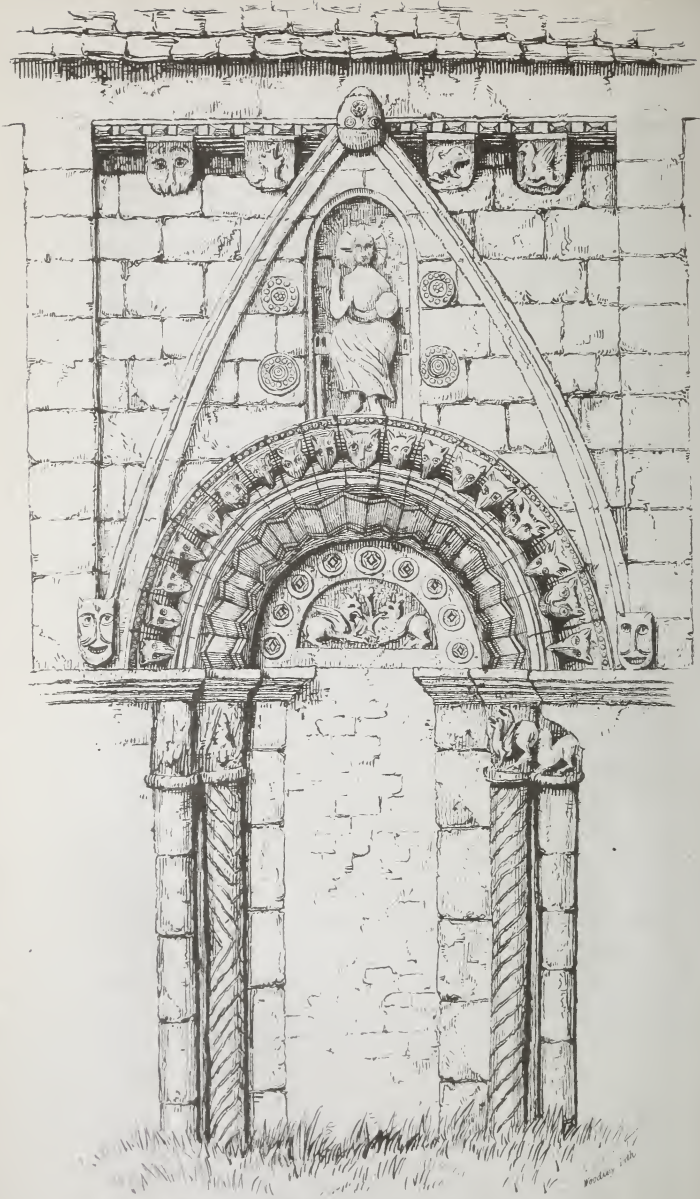
years at least, than that of the chancel. The South window is much mutilated; the drip remains, with the western-most corbel. It was formerly of three lights, and of the same date as the window I have just described. There is a *piscina* showing that there was once here a chantry altar. Its top is mutilated, but the bottom is boldly cut, and projects from the south wall ten inches. There is also a plain niche on the south side of the east wall, and a corbel-crowned head on the west side of the piscina, which may be a bracket; or it may be the finish of the drip of the south window, brought round to serve as a bracket.

The FONT is very curious, situated under the Tower. It is circular, of an early Norman date, and figured in "Britton's Architectural Antiquities." It bears this inscription, carved in Roman letters:

"HOC FONTIS SACRO PEREUNT DELICTA LAVACRO."

There is an Inscription on the edge, of which I give a copy, but can make nothing of it.

The TOWER itself is square and low, and of three stages. The windows, both on the north and south sides of the lower stage, are square-headed Decorated, and of two lights, and correspond with those in the chancel. The windows in the upper or belfry-stage are rather early Perpendicular, and are filled with stone, pierced in quatrefoils. The tower is surmounted by a plain Perpendicular battlement of good character; the pinnacles are gone, which must have given to the tower a crown-like appearance; their bases project beyond the surface of the tower. The string-courses are good, the upper one adorned with bold gurgoyles. The groining of the Tower is gone, and all the roofs are plastered inside.



NORTH DOORWAY, TUELLINGTON CHURCH.

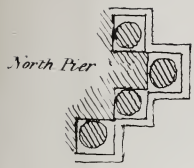
The Beacon or staircase-turret, is octagonal, and on the south-east angle ; the line of beacon *south*. The staircase, which is spiral, enters (as I mentioned) at the South-East corner inside the Tower, the pillar being cut away (as I suppose) to make room for the chapelry. The cap of the turret is flat, and formed of three stones, fitting in and probably intended to support the beacon fire. The thickness of the walls is, North and South, two feet eight inches only,—east and west, two feet eleven inches. The general character of the Tower is low and flat. Query—pared away ?

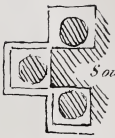
The West window is small and poor ; the tracery cut out, the opening may be Norman.

The entrances are on the North and South sides. The North doorway is an exceedingly curious specimen of Norman work. It is figured by "Britton." It is composed of three members. The interior member of the arch is flat, and ornamented with a sort of flower ; it is supported under the impost-moulding with a kind of square jamb. The second member is a series of well-cut chevrons, the points of the chevrons project outwards. It is supported under the impost by twisted columns. The capitals are carved with animals of some kind. The third member of the arch is ornamented with what I believe is usually termed the bird's beak moulding, though in this case the carved heads are not those of birds. On either side of this moulding is a bead ornamented with dots. It is supported under the impost on the east side by a plain shaft with a cushion-capital ; on the other side by a similar pillar with a capital carved with a centaur. The crown of the arch above the impost-moulding is filled up with a single stone, on which is carved two animals supporting, or fighting for, a Cross. Perhaps

some Antiquarian may explain the device, which is not uncommon in Norman doorways. I have supposed it to be a representation of a Lamb holding a Cross, and combating with the Power of Evil. Over the doorway is a niche, in which is a figure, probably of the Deity, a nimbus round the head, and with one hand held up, as in the act of blessing, or, it may be, holding a sceptre ; the other hand held a figure, perhaps that of the Son. There are four annulets sculptured around the niche, two on each side. Then follows a very singular drip (supported on queer corbel-heads) running for some inches above the impost-moulding, and enclosing both the arch and niche, extending to the corbel-tabling. It has no regular form whatever, and what arch it was meant for I cannot say. The South porch forms the principal entrance; the porch is of poor late Perpendicular, with a small West window, square-headed, and trefoiled. The inner doorway is Norman, quite plain ; but good, and the arch here is again filled up from the impost-moulding with a flat stone, which has a circle upon it. I would call attention to this doorway, as being the origin of the doorways with a square opening, we so often find. The chancel doorway on the south side is very flat, with an ogee head and drip, the opening, trefoiled. The buttresses to the nave on the north and west sides, are flat; Norman pilasters, projecting seven and nine inches respectively, finishing on the North side under the corbel-table. The church has no parapets. The corbel block-table is the only moulding except the "set off" close to the ground. There is an elaborate Cross fleury on the gable of the South chapelry. The buttresses of the chancel are bold, and set angleways, running about two-thirds of the height of the Walls.

The Illustrations to this paper are executed by Mr. T. H. Hair on stone, from original sketches by Mr. C. E. Giles.





FONT, LULLINGTON.

St. Cuthbert's, Wells.

BY MR. B. FERREY.

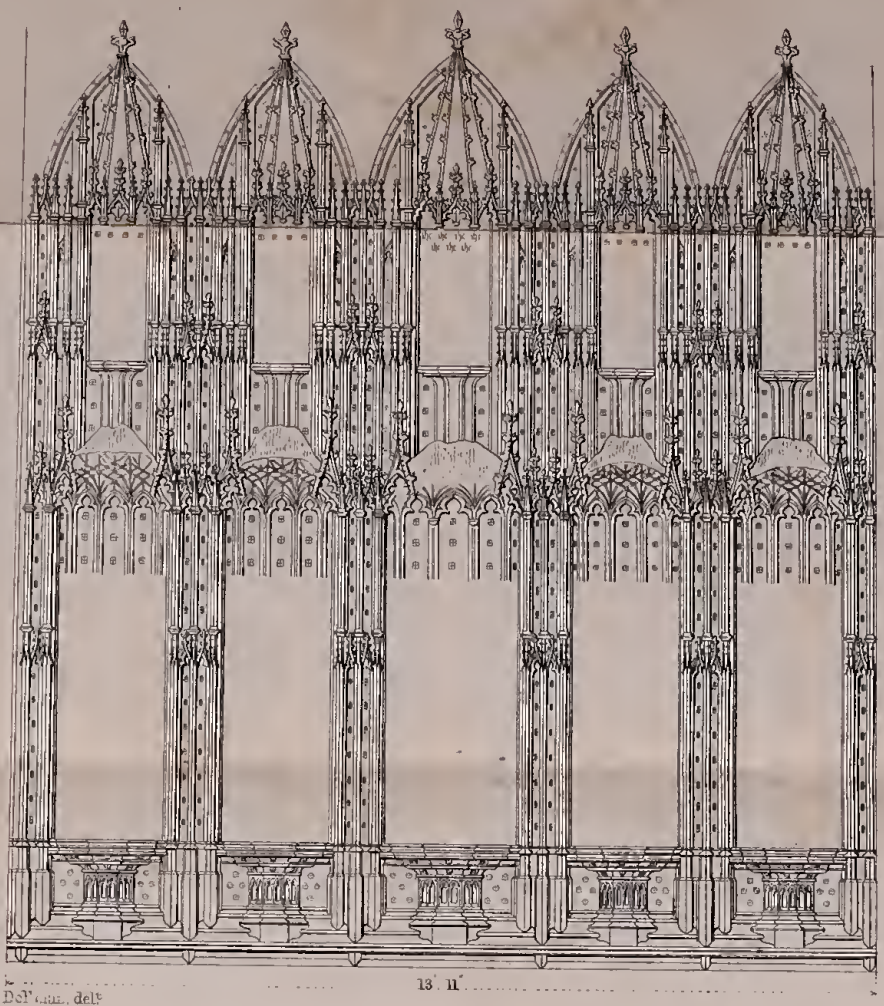
ST. CUTHBERT'S Church is a large and very interesting building, chiefly of the Third Pointed Period, and possessing the usual characteristics of churches in Somersetshire. The nave piers, and some of the windows, are of earlier date; and the weather-mould of the original roof is still visible on the east side of the tower, inside the church.

The church consists of a west tower, nave, and aisles, with chantry chapels both on the north and south sides. Transeptal chapels have also been added on the north and south sides, in which the reredos, the drawings of which are submitted to the meeting, were discovered. There are porches on the north and south sides of the church, each having a parvise over. The chancel has aisles; and the sacristy, on the north side, is original. The tower of the church is well known as one of the finest examples in Somersetshire. The first of some interesting discoveries was made about last August in one of the chapels before mentioned, on the north side of the nave (dedicated to the Holy Trinity), and consisted of a fresco, life size, of our Blessed Saviour, clad

in a russet-coloured garment, with a red cloak on his shoulders, and holding in his left hand an orb surmounted by a cross—his right hand in the act of benediction; the feet were bare. The monogram ihc mcy repeated ten times on the ground of the fresco; at the foot are the words '*Salvator Mundi*,' and over the head of the figure, an angel with outspread wings, holding a shield with the five wounds, on an azure ground. The fresco, when first discovered, was, I am informed, in a very dilapidated condition, parts of the colouring having since been restored. Eastward of this chapel, and immediately adjoining it, is one of the transeptal chapels, dedicated in honour of the Blessed Virgin. On the east wall of this, the reredos was accidentally discovered by the removal of some panelling.

It will be seen by the drawing that the design was most magnificent, the groining of the niches being of peculiar richness, and the execution of the whole work exceedingly delicate and beautiful. The centre of the lower range of niches is larger than the others, and probably contained the figure of the Blessed Virgin; the groining of the canopy was very different from the others, and was much richer. The centre of the upper range of niches may probably have contained the figure of our Saviour; the sacred monogram being there several times introduced.

In this, as in the reredos on the other side of the church, the niches were found filled with fragments of figures, all more or less mutilated, and with their faces turned to the wall, to give a smooth surface for the plastering by which they were concealed from view. In one of the windows on the north side of the chancel, which had been filled up to receive some plastering and panelling, were also found an immense number of fragments of figures, canopies of niches, pinnacles, and other ornamental portions. Every



F.T. Del[t] [illegible] delt[r]

ELEVATION OF REREDOS

AT EAST END OF LADYE CHAPEL

S[t] CUTHBERT'S CHURCH, WELLS, SOMERSET.

SCALE OF 0 1 2 3 4 5 6 7 8 9 10 FEET

one of the figures was headless ; and it is observable that those on which iconoclastic fury had been principally bestowed, were the Blessed Virgin and the figures of ecclesiastics. Many of these were of great beauty, and the colouring and gilding were as fresh and bright as though only recently executed. At the time I was at Wells, no attempt had been made (or rather had only just begun to be made) to classify and arrange them ; but I have no doubt that since October last, (the period of my visit to Wells,) some progress has been made in ascertaining the appropriation of the various fragments.

The blue lines in the upper canopies on the drawing indicate a presumed restoration of those portions, the whole of the projecting parts having been of course removed, to make a smooth face for the plaster. The lower range of niches present indications of what seems to me a great singularity, viz. of having had *double* canopies. On one of the compartments I have ventured to show something of what I conceive to have been the design, leaving the other compartments as they exist at present. The colouring and gilding generally is somewhat dilapidated, but enough remained to enable me to make a restoration.

The reredos on the south side of the church is altogether of very different design, as will be seen by the drawing, and, as I think, of later date than the other. It was discovered nearly at the same time with that in the Lady Chapel. The chapel in which it exists is known both as St. Cuthbert's Chapel and as Tanner's Chantry ; on the south side, on the removal of some plaster, was found a mural inscription, in black letter:—'Anniversare Thomae Tanner est in festo Ste. Katerinae.' The recumbent figure of Jesse was evidently very boldly and beautifully executed, but, with the exception of the feet and

some portions of the drapery, little more than the outline remains; traces of the stem issuing from his body exists, and are shown in the drawing. The design of this reredos has not so much variety as the other, the niches being exactly similar in every instance, and the execution not so good in some respects; a portion of it has been entirely destroyed, as will be seen by reference to the plan, on which this part is indicated merely in outline. From the appearance of the masonry of the window on the exterior, and the general clumsiness of the interior, I am induced to think it must have been brought to this spot from some other part of the building, and, after its insertion, the niches that were there previously were destroyed. Some of the figures that remain hold in their hands scrolls, with inscriptions referring to the history of Jesse and his descendants; and it may therefore be fairly assumed that they originally filled the niches in this reredos. I may add here, that no trace of the original altar exists in either instance.

A range of niches on a smaller and less elaborate scale in the east wall of the north aisle of the chancel, and a *piscina* and *sedilia* of the Middle Pointed Period on the south side of the chancel, were also brought to light, together with the original entrance into the sacristy, which had been closed up, and a modern entrance substituted. Of all these I took memoranda, but have not had time hitherto to draw them to scale. I hope to lay them before the Society at a future meeting.

In conclusion, I think it right to add, that the churchwardens of St. Cuthbert's Church, and indeed all the officials, have shown the greatest zeal in endeavouring to preserve from further injury, to the utmost of their power, these most interesting memorials.

The Somersetshire Fauna.

(Continued.)

BY MR. W. BAKER.

Fishes.

ACANTHOPTERYGII.

PERCIDAE.

Perch. *Perca fluviatilis*

Basse. *Labrax lupus*

Couch's Polyprion. *Polyprion cernium*

Great Weever. *Trachinus draco*

Lesser Weever. *T. vipera*

Striped Red Mullet. *Mullus surmuletus*

FISHES WITH HARD CHEEKS.

Sapphirine Gurnard. *Trigla hirundo*

Piper. *T. lyra*

Grey Gurnard. *T. gurnardus*

Shining Gurnard. *T. lucerna*

Miller's Thumb. *Cottus gobio*

Short-spined Cottus. *C. scorpius*

Long-spined Cottus. *C. bubalis*

Armed Bullhead. *C. cataphractus*

Rough-tailed Stickleback. *Gasterosteus trachurus*

Half-armed Stickleback. *G. semiarmatus*

Smooth-tailed Stickleback. *G. leiurus*

Ten-spined Stickleback. *G. pungitius*

Fifteen-spined Stickleback. *G. spinachia*

SPARIDAE.

Braize. *Pagrus vulgaris*

Sea Bream. *Pagellus centrodontus*

SCOMBERIDAE.

Mackerel. *Scomber scomber*

Sword-Fish. *Xiphias gladius*
Scad. *Caranx trachurus*
Dory. *Zeus faber*
Boar-Fish. *Capros aper*

RIBAND-SHAPED FISH.

Red Bandfish. *Cepola rubescens*

MUGILIDAE.

Grey Mullet. *Mugil capito*
Thick-lipped Grey Mullet. *M. chelo*
Atherine. *Atherina presbyter*

GOBIOIDAE.

Gattoruginous Blenny. *Blennius gattorugineus*
Double-spotted Goby. *Gobius bipunctatus*
Spotted Goby. *G. minutus*
Gemmeous Dragonet. *Callionymus lyra*

FISHES WITH PECTORAL FINS, FEET-LIKE.

Angler. *Lophius piscatorius.*

LABRIDAE.

Ballan Wrasse. *Labrus maculatus.*
Green-streaked Wrasse. *L. lineatus.*
Blue-striped Wrasse. *L. variegatus*
Three-spotted Wrasse. *L. carneus*
Comber Wrasse. *L. comber*
Gilt-Head. *Crenilabrus tinca*
Goldfinny. *C. cornubicus*
Gibbous Wrasse. *C. gibbus*

ABDOMINAL. MALACOPTERYGII.

CYPRINIDAE.

Common Carp. *Cyprinus carpio*
Crusian Carp. *C. gibelio*
Gold Carp. *C. auratus*
Gudgeon. *Gobio fluviatilis*
Tench. *Tinca vulgaris*
Roach. *Leuciscus rutilus*
Dace. *L. vulgaris*
Bleak. *L. alburnus*
Minnow. *L. phoxinus*
Loach. *Cobitis barbatula*

ESOCIDAE.

Pike. *Esox lucius*
Sea-Pike. *Belone vulgaris*
Sawry Pike. *Scomberesox saurus*
Flying-Fish. *Exocetus volitans*

SALMONIDAE.

Salmon. *Salmo salar*
Bull Trout. *S. eriox*
Parr. *S. salmulus*
Common Trout. *S. fario*

CLUPEIDAE.

Pilchard. *Clupea pilchardus*
Herring. *C. harengus*
Sprat. *C. sprattus*
Shad. *Alosa finta*
Allice Shad. *A. communis*
Anchovy. *Engraulis encrasicolus*

SUBBRACHIAL.

MALACOPTERYGII.

GADIADE.

Cod. *Morrhua vulgaris*
Haddock. *M. æglefinus*
Whiting Pout. *M. lusca*
Power Cod. *M. minuta*
Speckled Cod. *M. punctata*
Whiting. *Merlangus vulgaris*
Whiting Pollack. *M. pollachius*
Hake. *Merlucius vulgaris*
Lyng. *Lota molva*
Three-bearded Rockling. *Motella vulgaris*
Five-bearded Rockling. *M. quinquecirrata*
Great Forked Beard. *Phycis furcatus*
Lesser Forked Beard. *Raniceps trifurcatus*

PLEURONECTIDAE.

Plaice. *Platessa vulgaris*
Flounder. *P. flesus*
Dab. *P. limanda*
Lemon Dab. *P. microcephalus*
Long Flounder. *P. elongata*
Holibut. *Hippoglossus vulris*
Turbot. *Rhombus maximus*
Brill. *R. vulgaris*
Muller's Topknot. *R. hirtus*
Whiffe. *R. megastoma*
Scaldfish. *R. arnoglossus*
Sole. *Solea vulgaris*
Lemon Sole. *S. pegusa*
Variegated Sole. *Monochirus variegatus*
Little Sole. *M. linguatulus*

CYCLOPTERIDAE.

Lump Sucker. *Cyclopterus lumpus*
Unctuous Sucker. *Liparis vulgaris.*
Montagu's Sucker. *L. Montagui*

APODAL.

MALACOPTERYGII.

MURÆNIDAE.

Sharp-nosed Eel. *Anguilla acutirostris*
Broad-nosed Eel. *A. latirostris*
Conger. *Conger vulgaris*
Anglesey Morris. *Leptocephalus Morrisii*
Beardless Ophidium. *Ophidium imberbe*

ANGUILLIDAE.

Sand Eel. *Ammodytes tobianus*
Sand Launce. *A. lancea*

LOPHOBRANCHII.

SYNGNATHIDAE.

Deep-nosed Pipe-Fish. *Syngnathus Typhle*

Æquoreal Pipe Fish. *S. æquoreus.*

Great Pipe Fish. *S. acus*

PLECTOGNATHI.

GYMNODONTIDAE.

Oblong Sun Fish. *Orthagoriscus oblongus*

CHONDROPTERYGII.

STURIONIDAE.

Sturgeon. *Acipencer sturio*

Broad-nosed Sturgeon. *A. latirostris*

SQUALIDAE.

Small-spotted Dog-Fish. *Scyllium canicula*

Common Tope. *Galeus vulgaris*

Picked Dog Fish. *Spinax acanthias.*

RAIIDAE.

Skate. *Raia batis.*

Thornback. *R. clavata.*

Flapper Skate. *R. intermedia.*

PETROMIZIDAE.

Lamprey. *Petromyzon marinus.*

Lampern. *P. fluviatilis.*

Pride. *Ammocætes branchialis.*

Notes on the foregoing List of Fishes.

FISHES of many kinds, which are taken in considerable quantities in some parts of the kingdom, at almost any time of the year, and other species which approach the shores at regular seasons in innumerable multitudes, occur on the coast of Somerset rarely, or pay their periodical visits in small parties.

The turbid condition of the water of the Bristol Channel, no doubt is unfavourable to fishes which live much in the deep and clear sea.

The well known PERCH, is a beautiful fish both in form and colour, and is very abundant in fresh water rivers,

canals, and large ponds. This species has been taken in some parts of the kingdom more than six pounds in weight; in this county it seldom exceeds two pounds.

The BASSE is often taken on the Somersetshire coast. I have seen specimens weighing twelve pounds, brought from the estuary of the Parret, but the general size in the market is from half a pound to three pounds. It is a handsome fish, but not brilliantly coloured, of a chaste silvery hue, becoming gradually lighter and brighter from the back to the belly. This is the Lupus of the Roman poets.

COUCH'S POLYPRION was imperfectly known as a British species when Mr. Yarrell published his "History of British Fishes," but the supplement to the work cleared up the obscure parts of its history. It is not uncommon on the Devon and Cornish coast, and it occurs on ours nearly three feet long. I found in the stomach of one from the estuary of the Parret, a perfect and good sized *sepia officinalis*. In the Mediterranean this fish is common, and is sometimes taken one hundred pounds in weight. The colour is plain and dull.

The two species of TRACHINUS are taken on our coast, but are never abundant there. *T. vipera* is the rarer.

STRIPED RED MULLET is sometimes taken at the mouth of the Parret, but very seldom, and not large.

Of GURNARDS, we have several species on our coast, but none of them in any considerable numbers. I have met with the Shining Gurnard in Bridgwater market, but am not quite certain that it was taken on our coast.

We have four of the five British species of COTTUS. The Short-spined Cottus and the Armed Bull-head are often brought to market with shrimps, and the Long-spined Cottus with sprats.

We have all the Sticklebacks described in the "History of British Fishes," except the Short-spined Stickle, but it is doubtful whether they are all distinct species. The Fifteen-spined Stickleback is often brought to market with fish from Stolford, especially at the end of April, when I have found them full of roe and milt.

The Sparidae are rare on the Somersetshire coast, we have only the Braize and the Sea Bream.

Mackerel. Amongst the many species of fish that are taken in multitudes on the shores of the open sea, and occur here only as rarities, I have to mention the Mackerel, which is of so great importance at some of our fishing stations. It is recorded that a catch of Mackerel, by sixteen boats from Lowestoffe on one day at the end of June, realized £5252; and it was supposed that no less than £14,000 altogether was realized by the owners and men concerned in the fishery of the Suffolk coast at that time.

The Sword-Fish has been found at the mouth of the Parret. I have particulars of the capture of three specimens there, from my departed friend Mr. Robert Anstice. Two other specimens have come under my examination. I found one on the sands at Burnham in the summer of 1850, but it was so putrid that I could take only a hasty view of it; its length was more than eight feet.

The Dory is occasionally brought to market from Stolford, with other fish.

The Boar-Fish is very rare, but I have met with specimens in Taunton market from the south coast, and in Bridgwater market from Stolford. The figure of this fish, in Yarrell's work, is from a specimen found on a fish-stall at Taunton. The specimen in the Society's museum, was presented by F. F. Luttrell, Esq. through Mr. John Govett, of Stringstone.

Red Bandfish is rare ; a few have been taken in the estuary of the Parret. I once met with two specimens on the first of February, one sixteen inches long, with ripe roe, the other eight inches long, a male, with full milt. A few days later another female was brought to me, the ovarium of which was empty. The season of spawning is marked by this circumstance, and is probably the cause of their visiting our coast.

Grey Mullet is plentiful on the Somersetshire coast in summer. Many ascend the Parret beyond the reach of tide water, probably to spawn, as the fry of this species are found in the tributaries of the river in autumn.

Gattoruginous Blenny is often taken in the estuary of the Parret, in February and March. It probably comes to spawn, as the roe is then ripe. It is beautifully coloured and an interesting fish.

Spotted Goby is sometimes plentiful in the clay pits about Bridgwater, Tide water occasionally enters these pits.

Gemmeous Dragonet. Not uncommon. The brilliant colours which so curiously adorn these fish, I have found transferred to damp cloths in which I have wrapt them for a few hours, until I could deliberately examine them.

The Angler is not uncommon in Bridgwater Bay. Specimens of small size are often brought to market with other fish, but unintentionally, for at any age they are anything but tempting subjects for the fish-stall. The repulsive form of the Angler is expressed by some of its local names. I have had it brought from the estuary of the Parret weighing eighty pounds, with the ovarium empty.

The curious apparatus on the head, which gives it its most amiable name, is described in Yarrell's "History of

British Fishes;" and the nervous system of these appendages, and other interesting and animated remarks on the fish, are given by Mr. Couch, in his "Cornish Fauna."

The WRASSES are not numerous on our coast at any time. A few occur in May and June.

The BALLAN WRASSE is subject to great variation of colour, from a plain dull green, to a bright blue green, reticulated with vermillion and orange, and sometimes a rich red-brown, marked with blue and green.

The females have been described as plain in colour; but I have seen them of bright and varied colours, when full of roe. They are sometimes taken with mature ova in February, and in March without ova.

The CARP, eight or nine pounds in weight, is sometimes taken in the clay-pits near Bridgwater, and from the culverts under the Taunton and Bridgwater canal.

The CRUSIAN CARP has been taken in the Parret.

The TENCH is abundant and fine in most of the slow drains of the marshes, and in large ponds. It is generally full of roe in June.

The ROACH flourishes in purer water. It is abundant in fresh water rivers and canals. The *Argulus foliacius*, a very interesting parasite, is often found on this fish.

The BLEAK is not common in the western part of the county.

The MINNOW is plentiful in many of our brooks and rivers. I have found it in the tide-water of the Parret.

The JACK, or PIKE, formerly abounded in the upper parts of the Parret, and in the large drains of the county, but not so now; still it affords sport to anglers in the Avon and some other of our rivers.

The SEA-PIKE sometimes occurs in the Parret, nearly up to Bridgwater. It is often taken on our coast in summer.

floods of Autumn, and go to sea; probably they afterwards remain on the shore, for they are found inhabiting the sands and mud between high and low water mark.

The CONGER on our coast is abundant, but seldom large. It was considered by distinguished naturalists not twenty years ago, specifically the same as the common Eel, changed in size and color by living constantly in the sea; but it is now well known that specific differences are striking and numerous; above all, that the Conger has thirty vertebræ more than the Eel. Both are now known to be oviparous, and not viviparous, as until lately believed.

ANGLESEY MORRIS. This curious and rare little fish has been often brought to me from Stolford in summer. The late Mr. Anstice met with two specimens taken in the Parret, which he sent to Col. Montagu, and an account of them was published in the Wernerian Transactions.

BEARDLESS OPHIDIUM. One specimen only has come to my hands, which was taken at Stolford, in September 1838, and I sent it to Mr. Yarrell, with two of the last named species, who wrote to me as follows: "I have your obliging letter and box with the interesting contents,—the two examples of the Anglesea Morris and the Beardless Ophidium, which I had never seen before, and as there is an example of a Bearded Ophidium in the British Museum, I shall be able to do well with this genus, in the second edition of British Fishes."

SAND EELS are found in the mud and sand between high and low water at Stolford, but not in great numbers.

The PIPE FISHES are found as curiosities; the Great Pipe Fish is most frequently taken.

The OBLONG SUN FISH has occurred in the Bristol Channel off our coast. One was washed ashore at Swansea, in 1843, which weighed 180 lbs.

The STURGEON. Very large Sturgeons come up the Parret, sometimes almost to Bridgwater, several have been taken in the river and its estuary, from 250 lbs. to 280 lbs. weight; one was taken in 1850, ten feet long, and weighed 300 lbs. These large fish are females full of roe, and generally taken in June and July. Small specimens from six to twenty pounds are not uncommon.

The DOG FISHES, SHARKS, SKATES, RAYS, &c. are only casual visitors; the thick water of the Channel is no doubt unfavourable to this tribe of fishes; the Common Skate and Thornback are the most abundant.

The FLAPPER SKATE was sent to me from Minehead, in April, 1838, by our lamented Vice President, the late Mr. Standert.

The LAMPREY, and the LAMPERN, are taken in the Parret; and the PRIDE is very common in our brooks.

On the Aptychus.

BY MR. CHARLES MOORE.

IN the present advanced state of scientific knowledge, it does not often happen that any object in Natural History remains long, without being assigned its position in the animal kingdom. This however has not been the case with a curious body called the Aptychus, respecting which there have been various speculations. For some time it was supposed to belong to the Cirripides. Professor Forbes refers it to the Holothuriadæ; and Mr. Strickland, in a paper read on this subject before the Geological Society of London, believes it to belong to the ammonite, to which shell he considers it an *operculum;* or else, he suggests that, like the Nautilus, the animal of the Ammonite may have required horny supports, and that these bodies may have performed that office.

It has been noticed that the Aptychus is rarely found except in beds of the secondary formations, in which the ammonite is obtained; consequently it has not been obtained higher than the chalk, in the beds above which the ammonite is supposed to have become extinct, and not

lower than the blue lias. But it is not always the case that, where ammonites abound, the Aptychus is in equal abundance; on the contrary, there are many beds containing ammonites in great numbers, in which the Aptychus is rarely, if ever, found. This may have been accidental, or depending upon the circumstance, that the character of the beds in which they are absent was not such as to tend to their preservation, as in the case of others deposited under more favourable circumstances. In the beds of the lower lias it is occasionally found symmetrically placed in the *impressions* of ammonites, having a somewhat semicircular form, thin and wrinkled in its appearance, and of a very dark colour. In the upper lias, the Aptychus differs in form. It is there striated, and formed of two valves, somewhat resembling a bivalve shell, but without the hinge, which is always possessed by these shells. It is generally of a brown colour, and horny in its structure, but still occasionally shewing the deep carbonaceous black tint possessed by those in the beds below. In the green-sand it again alters its character, and becomes punctured and porous in appearance. The conclusion that the Aptychus might belong to shells of the Cephalopoda, was arrived at, from its association in the same bed with the ammonite, and from its being frequently found in its outer chamber. Now the mere circumstance of its being so found in the chamber of the ammonite, although presumptive evidence, I do not consider sufficient to establish the fact of its having anything to do with the animal inhabiting that shell; because we are aware that many parasitic creatures take possession of the shells of other animals and make them their place of abode. From my own observation, I repeatedly find this to be the case, and that with the Aptychus are associated many such para-

Sawry Pike is rare. I have seen only one specimen, which was taken at Stolford at the end of July. It was sixteen inches long.

Flying Fish. Two or three have been found at Burnham; perhaps driven on shore by rough winds. I copy the following from Dr. Fleming's "History of British Animals":—

"A single example of *Exocetus Volitans*, or Flying Fish, was caught at a small distance below Caermarthen, in the river Towy, in June, 1765. . . . Another in July, 1823, ten miles from Bridgwater, in the Bristol Channel, a notice of which was communicated to the Linnæan Society, by the Rev. S. L. Jacob, of Woolavington."

Salmon ascend many of the rivers of the county to spawn. They visit the Parret in May, June, and a few in July and August, but perhaps not for this purpose; the condition of their roe, and the time of the year, seem to imply that some other instinct brings them into this muddy river at this season. We make the same complaint that is heard in the vicinity of other salmon rivers, namely, that salmon were formerly much more plentiful than now.

Salmon Peel, Salmon Trout, and Bull Trout of Authors, are also taken in the Parret, in its estuary, and along the coast; and the Parr and Common Trout are in most of our fresh water rivers and streams. Very many books have been written on the genus Salmo, and of late years much has been done, through careful investigation, to lessen the confusion of supposed species and varieties of this genus; but there is still much more to be done to make the subject intelligible to inquisitive naturalists. The number of species in our books is reduced,

and how many more will be found only varieties, is yet to be learned.

The PILCHARD, which is of such incalculable value in Devon, Cornwall, and other parts, is out of its proper element in the Bristol Channel, and only a few stragglers are found on our coast. The cause is perhaps the same as that which keeps away the multitudes of mackerel and other fish. Full and very interesting information on the laws made in the reigns of several sovereigns for regulating pilchard fishing, and the consequent trade, is to be obtained from Couch's "Cornish Fauna;" and accounts of the astonishing quantities sometimes taken, and their great value, are given in Yarrell's "British Fishes."

The HERRING does not visit our shores regularly in shoals; but sometimes, from September to January, large quantities are taken by drift and stake nets, along the whole line of coast westward, from the mouth of the Parret. A few are taken every autumn; and the herrings of the Bristol Channel are always delicious.

The SPRAT. This little fish affords the most valuable fishing that we have on the Somersetshire coast. Multitudes come here almost every October, and remain until January. They are caught by stake nets, chiefly at the Gore, and brought to the markets every day, and sometimes after every tide. A paragraph in the *Taunton Courier*, a few years ago, says that a ton of sprats was retailed in Taunton Market in one day; and from information which I have collected with great care, I learn that the sprat fishing, from the western extremity of the Gore to Weston-Super-Mare, will produce in a good season more than £10,000, at the retail prices.

The annual shoals of HERRINGS and SPRATS are great blessings to the poor, supplying abundance of good, fresh,

and exceedingly cheap food for two or three months in early winter ; the fish salted and dried, are much valued. Herrings and Sprats, strung and suspended in lines in cottage kitchens, are to be seen for months after the fishing season is over.

Shads quit the sea in summer, and ascend rivers to spawn in fresh water; they are common in the Parret.

Anchovies are very fine at the mouth of the Parret, and are taken at Stolford in considerable numbers in May and June, when the roe is mature.

Codfishes are taken nearly in every month at Stolford, but they are generally small, except in the last three months of the year, when considerable numbers of fine large fish are taken on the Gore, by hooks suspended from floated lines.

The Whiting is seldom large, but great quantities of small ones are brought to market almost constantly through the year.

The Haddock, Whiting Pollock, Hake, and the Lyng, are taken occasionally, but they are not abundant.

The Great and Lesser Forked Beard, are found only as rareties.

The Plaice is common, but seldom large.

The Flounder or Flook is very abundant, and is taken at sea, in tide rivers, and in the fresh water, above the flow of tide. It is sometimes taken in clear streams far from tide rivers.

The Dab is common, but does not inhabit fresh water, like the Flounder. It feeds much on the small Mollusk, *Bulla retusa.*

The Lemon Dab is rare.

Long Flounder. Two specimens only are recorded, which were taken at Stolford, and which I sent to Mr. Yarrell, who says in his "Supplement to the History of

British Fishes," 'I have reason to believe that it is not only undescribed as a British Fish, but is altogether new to Ichthyology.'

The HOLIBUT is not uncommon on our coast; it is generally small, but sometimes a large one is taken; a specimen of thirty or forty pounds is considered large, although this fish has been brought to Bridgwater from other parts weighing more than 200 lbs.

The TURBOT is not uncommon, but it is almost always small; the same may be said of the BRILL and others of this family of fishes.

MULLER'S TOPKNOT is often taken in spring.

The SOLE is always abundant and delicious from Stolford and other fishing stations of our channel, but generally much smaller than the usual size of this fish from the shores of the open sea.

LEMON SOLE, the VARIEGATED, and the LITTLE SOLE, are rare.

LUMP SUCKER is common; the roe is mature in April; I have found it weigh one pound, thirteen ounces, from a fish of six pounds, three ounces.

EELS are abundant on the sandy parts of the coast of our channel, and in our rivers, streams, ponds, and ditches; it is our most widely diffused species of fish. ELVERS ascend the rivers in spring, they go up the Parret in March, April, and May, with the high tides, and myriads are skimmed up with fine nets at the ebbing of the tide, by the cottagers above Bridgwater.

These innumerable multitudes of little creatures, soon leave the salt and brackish water, against every obstacle, entering rivulets, brooks and drains, and occupying all the inland waters, thus providing for the constant waste of the species. Mature Eels leave the fresh water with the first

sitic shells; consequently other evidence is necessary to establish their connexion, and a few links in that chain of evidence I hope to add.

In the upper lias of the neighbourhood of Ilminster the Aptychus is frequently found, and in a condition and state of preservation which probably allows of its being better studied than in many other beds. Interposed between some beds of clay, containing a very interesting group of organic remains, there occurs a thin bed of yellow limestone, in the breaking up of which it often happens that a section of some small ammonites are obtained, and a fortunate fracture occasionally gives a view of the Aptychus lying in the outer chamber. It is also occasionally found in another way in the same bed. Now and then ammonites of a larger size were imbedded; and when this was the case, they appear to have been acted upon by water, which passing gently over them, (probably before the bed had become much hardened,) tended to facilitate the decay of the shell, leaving in many instances nothing but their casts. Curiously enough, in these casts the Aptychus is frequently left in the most perfect preservation, lying in that part of the cast that would answer to the outer chamber of the ammonite, generally symmetrically placed, and always corresponding to the size and growth of the shell they appear to have inhabited, or in which they are found. These casts also shew that before the ammonites were covered up, there were attached to them the parasitic shells I mentioned; oysters and other shells appear at times to have covered all parts of them. But there is this to be noticed, that these shells are not so often found in the interior of the chamber, as attached to the outside of the shell; and that whilst there may be a hundred oysters, there is never more

than one Aptychus ; a fact which, I think, will help to establish the connexion of this body with the ammonite. Some of the ammonites containing Aptychi are so small as to be nearly microscopic, and it is not likely that shells so diminutive and young, would be selected by any parasitic creature for a habitation ; or that they would by accident be washed into the deserted chambers of these shells, which with larger specimens might have happened.

I am still further strengthened in the conclusion that the Aptychus must belong to the ammonite, by the fact that I have been able to make out about ten forms or species of Aptychi from the upper lias ; and I find that a particular form of Aptychus is always allied to a particular species of ammonite, a circumstance which cannot be accidental, and which has not hitherto been noticed. This latter fact will I think be considered conclusive, that this body performs some as yet unascertained functions in connexion with it. That it is an *operculum* I am inclined to doubt. The principal reason for its being so considered is, that when the valves of the Aptychi are expanded, they would cover about a transverse section of the chamber. We know that the nautilus, the animal nearest allied to the ammonite, does not possess an operculum. This animal has continued through most of the world's changes to the present time, and consequently its organization can be studied. The ammonite, although presented to us as "Medals of Creation," of many hundred species in the rocks which surround us, has no living representative ; for which reason we can only speculate as to the office this body had to perform in its economy. Both these shells are chambered, and possessed of a beautiful provision for regulating their specific gravity in their native element. By means of the syphuncular tube, which passes through

all their chambers, they were able to adapt themselves to any circumstances, and sink or swim at pleasure. The difference in the two shells is not great, the principal being in the position of the syphuncular apparatus—that of the nautilus being central—that of the ammonite being situated on the outer margin of the chambers. In the casts containing Aptychi to which I have referred, there are always some traces of this syphuncular apparatus ; and in some instances the tube is in nearly perfect preservation, passing along the outer edge of the whorls of the shell until it reaches near to the position where the Aptychus is imbedded, and it appears to be of the same horny texture as is presented by the Aptychus. In the fractured sections of ammonites, where the Aptychus lies in the chamber of the shell, it is frequently with its dorsal margin pointed to, or near where the syphuncle passes; and from this, combined with the preservation of the syphuncular tube with it, I am rather inclined to the opinion that the body has something to do with the curious but beautiful provision with which nature has furnished these shells, and which further observation will probably more clearly demonstrate.

Since reading my paper at the Weston meeting, I have learnt that Von Buch has noticed the discovery of the Aptychus in a Scaphite, in a paper published in the Bulletin of the Geological Society of France ; and T. Rupert Jones, Esq. the zealous assistant secretary of the Geological Society of London, mentions the occurrence of an Aptychus holding its proper place in an Orthoceras, in their museum. Thus it has been found in three genera of cephalopida, in each of which it was destined to perform the same office.

The Somersetshire Fauna.

(Continued.)

BY MR. W. BAKER.

Reptiles.

THE number of British species of reptiles is very limited. Professor Bell, in his recent edition of the "History of British Reptiles," records only fourteen, and this small number is made up by the addition of several species unknown as British until of late years. Of these we can claim only ten or eleven for our Somersetshire Fauna.

Most people are averse to close acquaintance with these creatures, therefore little is generally known about them; but they are all, except the Viper or Adder, *Pelias Berus*, quite harmless, and very interesting to those persons who can observe and study them complacently. The amphibia are all easily reared in confinement from the ova, through all their changes, and in a clear and roomy glass vessel they are lively and amusing little things, and their development will furnish subjects of deep contemplation to the philosophical naturalist.

TESTUDINATA. CHELONIDAE.

The HAWK'S-BILL TURTLE, *Chelonia imbricata*, has been taken alive in the river Parret.

Professor Bell, in his "British Reptiles," says that "the single and purely accidental occurrence of a bird or a fish, within the range of our guns or our nets, had always constituted the wanderer fair game to our Faunists ; I have therefore determined to avail myself of the means thus offered me, of adding to our Fauna the Hawk's-bill Turtle and the Trunk Turtle, the two stray species which have been accidentally found on our coast." My inducements for claiming the Hawk's-bill Turtle for our Fauna of Somersetshire are irresistible ; namely, Professor Bell's example; the following letter from my departed friend, Mr. Anstice, written to me many years ago ; and the interesting and very apposite observations on this subject by Sir Charles Lyell, in the second volume of his "Principles of Geology."

Mr. Anstice says : "I know the circumstance of the Turtle being caught in the river Parret. It is not very probable I think, that it was assisted hither by our trading vessels from abroad. I should think they may sometimes accompany the intertropical seed-vessels and shell-fish that are yearly brought to our channel, and to the coasts of Scotland and Ireland, by the gulf stream. I have seen the species in question on the coast of Portugal, and once, I remember, in a winter month and a gale of wind ; and why should they not, therefore, take an excursion across the Bay of Biscay occasionally in summer time?"

The following are Mr. Lyell's coincident remarks : "Turtles migrate in large droves from one part of the ocean to another, during the ovipositing season. Dr. Fleming mentions that an individual of the Hawk's-bill Turtle has been taken on one of the West Zetland islands ; and according to Sebbald, the same animal came into Orkney; another was taken in the Severn, in 1774, according to Turton."

Thus we have good authority for enriching our list with the Hawk's-bill Turtle of the Parret, which came alive into my possession.

SQUAMATA. LACERTADAE.

(SAURIA.)

VIVIPAROUS LIZARD—*Zootoca vivipara.*

This is the *Lacerta agilis* of former authors, which name seems to have been misapplied, and to have belonged to another species of this genus, which is not uncommon in the neighbourhood of Poole, in Dorsetshire, and to which it is now given. Our active little lizard is common in many parts of our county. I have seen many apparently sleeping on the sunny sides of dry hedge-row banks about Bridgwater, on Quantock and Mendip, &c. and almost always in sunshine. They are readily disturbed; are very agile, and difficult to catch. If a person's curiosity should lead him to capture one of these pretty little reptiles, he must not seize it by the tail, for it values its liberty more than this appendage, and will run away, leaving it wriggling in the hand of the captor.

SAUROPHIDIA. ANGUIDAE.

BLIND WORM or SLOW WORM—*Anguis fragilis.*

This inactive and harmless creature is common all over the county, except in marshy places. This will also part from its tail when handled roughly. Its bony structure is intermediate between the lizard and the snake.

OPHIDIA. COLUBRIDAE.

COMMON SNAKE—*Natrix torquata, Coluber Natrix.*—Linn.

This beautifully marked and harmless reptile is common. The eggs of snakes are well known, clusters of them being often dug out of manure heaps and warm banks. I have kept some of them for weeks together, opening one or two occasionally for my friends' amusement, or my own,

when the young reptiles readily crawled out of their envelope, and roved about very prettily when placed on the carpet or an unpolished table-cover. Although they were probably rather prematurely liberated, their colours and markings were nearly perfect, being only a little paler than maturer specimens. The snake is easily tamed, and brought to come daily for its food, and to notice those who are attentive to it, but will shun strangers.

OPHIDIA. VIPERADAE.

VIPER or ADDER—*Pelias Berus, Coluber Berus.*—Linn.

This is the only poisonous British reptile. It is common throughout our county, but not so numerous as the ringed snake. The form of the viper is not so elegantly tapered, nor are the colours so bright and lively as those of the snake. The Red Viper and the Black Viper are now considered as varieties only of the common species.

The AMPHIBIA, like the true *reptilia*, constitute a small group, which has been considered by authors a class of the order reptilia; but Professor Bell makes it a distinct class.

ANOURA. RANADAE.

COMMON FROG—*Rana temporaria.*

This is a prettily coloured and active creature, therefore less repulsive than its congeners. It abounds in early spring, the season of depositing its ova, in slowly running ditches and stagnant ponds; and in summer in moist and marshy meadows. Sometimes in early autumn, multitudes of young frogs and toads are seen migrating from the borders of their native ponds to more convenient habitations.

It has been believed that the young of the amphibia could not be developed to the perfect form in darkness; but it is has been lately proved by Higginbottom, "that absence of light has no influence in retarding their development."

ANOURA. BUFONIDAE.

The TOAD—*Rana Bufo.*—Linn. *Bufo vulgaris.*—Laurent.

This is also very common. In general opinion the Toad bears the same relation to the Frog, as the Viper does to the Snake. Its form is clumsy, its colours dull, and its movements slow; and to most persons it is disagreeable or loathsome; others who are accustomed to study these creatures, look on them not only without disgust, but with much agreeable interest.

URODELA. SALAMANDRADAE.

The WARTY NEWT or WATER EFT—*Triton cristatus.*

EVET, of Somersetshire.

This is the largest of the British Newts. It is common in ponds and ditches, from early spring to the end of summer; and in old shrubby banks, hollow trees, and rubbish, all the winter.

SMOOTH NEWT, EFT, or EVET—*Lissotriton; Lacerta aquatica.*—Linn.

This also is very common in still water in summer, and in grass banks, &c. in autumn and winter.

FRINGE-FOOTED SMOOTH NEWT.

This is also common, with habits like those of the last mentioned, and perhaps is only a more perfectly developed form of the same.

WEBB-FOOTED SMOOTH NEWT.—*Lissotriton Palmipes.*

This, the prettiest of the Newts, was first found, as British, on Clay Hill Farm, at Cannington, in our county. It has been since found near Edinburgh, and both occurrences are published in the "Zoologist," and in the second edition of Bell's "British Reptiles." I had long possessed specimens of the new British Newt, when in April, 1843, I received a note from the Dean of Westminster, who was then giving lectures on reptiles to the Ashmolean Society.

I extract the following from Dr. Buckland's characteristic note :—

"Have you ever noticed how many species of Water Newts live in your stagnant ponds? We have three near Oxford, as plentiful in ponds remote from ducks, as once the Saurians were in the mud of the nascent lias."

In reply, I informed the Dean that I had paid a good deal of attention to these creatures, and that I had a new species, which I described to him. My note was handed over to Professor Bell, and it produced an immediate communication from that gentleman, of which the following is an extract :—

"I shall be particularly glad to have some of the little Newts, as I think it exceedingly probable that it may prove to be a new species."

Without delay I sent four specimens in a letter. What a privilege to be able to send to a friend four living four-footed beasts in a post letter! These soon caused the following acknowledgment, written at Selborne, and I believe in the very house in which the universally admired "History of Selborne, by Gilbert White," was written :

"I thank you very sincerely for sending the Newts, three of which are living and in good health, in a glass globe. The species is undoubtedly distinct, and I believe undoubtedly new, not only to this country, but to science. I shall have an opportunity of figuring them before long in my second edition of the 'Reptiles.'"

"Thomas Bell."

Soon after I received the above, I had another highly characteristic note on the subject from Dr. Buckland, from which I copy the following :—

"I am glad to find your Salamanders are new species, and that you are in communication with Mr. Bell. Your

neighbourhood, before the days of drainage, must have been a perfect paradise for such creatures, and some rare species may still survive."

"W. BUCKLAND."

In 1848, Mr. Wolley discovered this Newt near Edinburgh, and published an account of it in the "Zoologist" for July of the same year; ultimately it proved to be known on the Continent, although quite new to Britain. The second edition of the "British Reptiles" contains many particulars relating to this species, and to its capture in Somersetshire.

Appendix to Paper on Holwell Cavern.

PAGE 14.

Being desirous to try how far the transfer of carbonate of lime, from a piece of *limestone* upon a piece of *clay-slate*, under electric action, would succeed,—that is, whether the carbonate of lime so transferred, would appear in the form of *common* carbonate of lime upon the clay-slate, or of *arragonite*,—I made the following experiment. I placed a large glass funnel vertically in a wooden stand, filling it about one-fourth with a mixture of limestone and clay-slate coarsely powdered, and then pouring in water up to the brim. Underneath this I suspended a piece of clay-slate, some inches in length, on the middle of which the water from the funnel above was constantly dropping, keeping the greater portion of the suspended clay-slate continually wet. On one end of this wet slate I caused a piece of *limestone* to rest, connecting it by a platinum wire with the *positive* pole of a small and weak, but constant, voltaic battery. On the opposite end of the wet clay-slate, I caused another, but smaller piece of *clay-slate* to rest, connected by a platinum wire with the *negative* pole of the same battery. The electric action gradually drawing to the positive limestone a portion of the very minute quantity of mineral acid common to almost all waters not distilled, extracted slowly a part of the lime, which on well known principles was carried to the negative clay-slate, and is now depositing itself in the form of, *not*

common carbonate of lime, but of *groups of crystallized arragonite*, in starry concretions of prismatic needles, issuing from their respective centres. These crystals are formed upon the upper piece of negative slate in the greatest perfection, and are beginning to be formed upon the whole of the large piece of clay-slate which supports the limestone and slate that rest upon it ; and in the course of time, if the experiment be continued sufficiently long, will entirely cover it. This experiment was set in action August 14th, 1851, so that at present it has only continued for seven months and a half. I cannot explain *why arragonite* should make its appearance instead of some one of the numerous formations of common carbonate of lime ; but such is the fact, and it is perfectly explanatory of the growth of arragonite upon the clay-slate of Holwell Cavern. I should add that the droppings of the water from the funnel are caught by a pitcher standing underneath the suspended clay-slate, and daily returned into the funnel above.

ANDREW CROSSE.

Broomfield, March, 1852.

Appendix to Paper on Worle Camp.

Kingston Lisle, Wantage,

April 14th, 1852.

My dear Sir,

I at length, somewhat tardily I fear you will think, fulfil my promise of sending you the map* of the old encampment on Worle Hill, and I shall be only happy if it is of the slightest use to you, in helping to illustrate the description you are about to give of that interesting spot, in your Somersetshire Archæological Journal.

I have coloured the map, thinking to make it more intelligible to you than it would be if the details had been simply etched with the pen, and particularly so, as I happen to have worked it on so small a scale.

I hope, however, on a little patient examination, it will be intelligible to those who have visited the spot, although I feel satisfied that the extensive nature of the outworks on the sides of the hill, has escaped the notice of the generality of visitors. I shall be very glad if what I have attempted to describe, in reference to this interesting portion of these old defensive works, will only call the attention of the learned in such matters to this part of the subject, before the ruthless march of improvement destroys utterly every vestige of what I think can now be satisfactorily traced, to have been a systematic, though, to modern ideas, rude mode of defence, adopted in olden times on this spot.

I imagine the remains of the clusters of detached tri-

* This illustration is given at page 64.

angular platforms, and particularly those flanking the hollows in the sides of the hill, to have been placed so that, on a sudden emergency, the slingers could hastily arrange themselves in the best position, so as to cover the retreat of their friends, and meet an advancing foe.

I have been led to the belief that these clusters of platforms were arranged principally for the use of the sling, in consequence of their being detached from each other, the slinger requiring *elbow room.*

The large cluster between the two roads to the north of the encampment, I only discovered just before I was leaving the place the other day. You will observe that they are placed almost at the head of a hollow in the side of the hill, extending from the sea cliff, which is much indented at that spot, and might have afforded a landing for boats. You will see also, on looking more eastward, another cluster, apparently placed for guarding a passage for cattle over the inner ditch of the probable cattle enclosure.

The serrated *upper* edge of the rampart, detached from the main rampart on the south of the camp, which you will observe I have made continuous, can be easily traced in many parts; while the scolloped line with which I have fringed the *under* side of the main south rampart, is meant to represent what I think can be traced perceptibly, of the remains of places of shelter for the sentries, formed in the facing of the wall; and the same appears to have existed in many parts *within* the camp on the south side, but my plan is on too small a scale to mark them distinctly, as I thought it was also so in the case of the mysterious small circular sinkings on the main walls. On second thoughts, however, many of the latter might be marked on the plan if it were wished, but I had not time to attempt to do so accurately when on the spot the other day.

Except on the subject of the narrow winding path traced from the limekiln to just within the old cattle enclosure, I don't know that I can say more to you now,—the path, from the direction it takes, and from its being flanked by, and intersecting in a marked manner, many of the outworks, I imagine to be coeval with the encampment.

I only regret that I did not have you with me to go over the whole ground, and attempt to explain on the spot what may, without a careful survey, be looked upon as a *wild theory*—but Archæologists *must expect to afford a little to laugh at now and then.*

Yours very truly,

E. MARTIN ATKINS.

Rev. F. Warre.

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RULES.

THIS Society shall be denominated "THE SOMERSETSHIRE ARCHAEOLOGICAL AND NATURAL HISTORY SOCIETY;" and its objects shall be, the cultivation of, and collecting information on, Archæology and Natural History, in their various branches, but more particularly in connection with the County of Somerset.

II. The Society shall consist of a Patron, elected for life; a President, elected for three years; Vice Presidents; General, and District or Local Secretaries; and a Treasurer; elected at each Anniversary Meeting; with a Committee of twelve, six of whom shall go out annually by rotation, but may be re-elected.—No person shall be elected on the Committee until he shall have been six months a Member of the Society.

III. Anniversary General Meetings shall be held for the purpose of electing the Officers, of receiving the Report of the Committee for the past year, and of transacting all other necessary business, at such time and place as the Committee shall appoint; of which Meetings three weeks notice shall be given to the Members.

IV. There shall also be a General Meeting, fixed by the Committee, for the purpose of receiving Reports, reading Papers, and transacting business.—All Members shall have the privilege of introducing one friend to the Anniversary and General Meetings.

V. The Committee is empowered to call special Meetings of the Society, upon receiving a requisition signed by ten Members.—Three weeks notice of such Special Meeting and its object, shall be given to each Member.

VI. The affairs of the Society shall be directed by the Committee, (of which the officers of the Society shall be EX-OFFICIO Members) which shall hold Monthly Meetings for receiving Reports from the Secretaries and Sub-committees, and for transacting other necessary business; five of the Committee shall be a quorum.—Members may attend the Monthly Committee Meetings, after the official business has been transacted.

VII. The Chairman at Meetings of the Society, shall have a casting vote in addition to his vote as a Member.

VIII. One (at least) of the Secretaries shall attend each

Meeting, and shall keep a record of its proceedings.—All Manuscripts and Communications, and the other property of the Society shall be under the charge of the Secretaries.

IX. Candidates for admission as Members shall be proposed by two Members at any of the General or Committee Meetings, and the election shall be determined by ballot at the next Committee or General Meeting; three-fourths of the Members present ballotting, shall elect. The rules of the Society shall be subscribed by every person becoming a Member.

X. Ladies shall be eligible as Members of the Society without ballot, being proposed by two Members, and approved by the majority of the Meeting.

XI. Each Member shall pay ten shillings on admission to the Society, and ten shillings as an Annual Subscription which shall become due on the first of January in each year; and shall be paid in advance.

XII. Donors of Ten Guineas or upwards shall be Members for life.

XIII. At General Meetings of the Society the Committee may recommend persons to be ballotted for as Honorary or Corresponding Members.

XIV. When any office shall become vacant, or any new appointment shall be requisite, the Committee shall have power to fill up the same; such appointments shall remain in force only till the next General Meeting, when they shall be either confirmed or annulled.

XV. The Treasurer shall receive all Subscriptions and Donations made to the Society, and shall pay all accounts passed by the Committee; he shall keep a book of receipts and payments, which he shall produce whenever the Committee shall require it; the Accounts shall be audited previously to the Anniversary Meeting, by two Members of the Committee chosen for that purpose, and an abstract of them shall be read at the Meeting.

XVI. No change shall be made in the Laws of the Society except at a General or Special Meeting, at which twelve Members at least shall be present.—Of the proposed change a month's notice shall be given to the Secretaries, who shall communicate the same to each Member three weeks before the Meeting.

XVII. Papers read at Meetings of the Society, and considered by the Committee of sufficient interest for publication, shall be forwarded (with the Author's consent) to such Periodical as shall be determined by the Committee to be the best for the purpose, with a request that a number of such papers may be printed separately, for distribution to the Members of the Society, either gratuitously or for such payment as may be agreed on.

XVIII. No Religious or Political Discussions shall be permitted at Meetings of the Society.

XIX. That any person contributing Books or Specimens to the Museum shall be at liberty to resume possession of them in the event of the property of the Society ever being sold or transferred to any other county. Also persons shall have liberty to deposit Books or Specimens for a specific time only.

N.B. One of the objects of the Society shall be to collect by donation or purchase, a Library and Museum, more particularly illustrating the History, Natural, Civil, and Ecclesiastical, of the County of Somerset.

*** *It is requested that Contributions to the Museum or Library, be sent to the Curator, at the Society's rooms, Taunton.*

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Colston, W. H. M. *West Lydford, Somerton*
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Murch, E. *Bridgwater*
Murch, Rev. Jerom, *Bath*

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Sanford, W. A. „ „
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Sealy, J. L. „
Serel, T. *Wells*
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Stone, Rev. W. *Taunton*
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Yatman, Rev. J. A. *Winscombe, Sidcot*
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Bluett, C. *Taunton*
Chamberlain, G. *Castle Cary*
Easton, R. *Taunton*
Hall, Rev. C. R. *Pitminster*
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Lambert, W. C. *Knoyle*

Members are requested to inform either of the Secretaries of any errors or omissions in the above List; they are also requested to authorize their Bankers to pay their subscription, annually, to Messrs. Badcock, or Messrs. Stuckey, Taunton; or to either of their branches; or their respective London Agents; on account of the Treasurer.

Taunton: Frederick May, Printer, High Street.

Restoration of the Tower of Taunton Saint Mary Magdalene.

At a Meeting held at the Market House, Taunton, May 14, 1852, *to consider the state of the Tower of the Church of Taunton St. Mary Magdalene.*

Rev. H. PARR, the Vicar, in the Chair.

Present—Messrs.

Steevens, } Church-	Giles, W.	Sutton, C.
Porter, } wardens.	Hayman,	Sweet,
Edwards, }	Hucklebridge,	Todd, Major
Badcock, H.	Jeboult,	Trenchard, F. A.
Badcock, R.	May,	Trood, H.
Baker,	Pinchard,	Turle,
Beadon, E.	Pring,	Welch,
Chard,	Rawlinson,	Woodland, W.
Coker, W.	Rendell,	Woodford, W.
Cox, A. C.	Small,	Wright,
Fisher, T.	Smith, Rev. F. J.	

A Report of the state of the Tower, with plans, from Messrs. Carver and Giles, was laid before the Meeting.

A Summary of the Report with an Estimate having been read, it was moved by Mr. R. Badcock, seconded by Mr. F. A. Trenchard, and *resolved unanimously*,—

That this meeting receives the Report obtained by the late and present Churchwardens, as to the state of the Tower, and offers its best thanks to those gentlemen for the course they have taken.

That the Report fully satisfies this meeting, that immediate proceedings are necessary for the repair and restoration of the Tower: with reference not only to its ornamental character, but to the security of the fabric of the Church.

It was moved by Mr. H. BADCOCK, seconded by Mr. JEBOULT, and *resolved unanimously*,—

That it is the opinion of this Meeting, that the necessary sources for proceeding with such repair and restoration, should be raised by parochial rate, and subscriptions in aid thereof, and that the Churchwardens be requested to convene a Vestry Meeting, in order to consider the said report, and the propriety of making a rate for the purpose of raising such sum, or to take such other steps as may at such Vestry Meeting be agreed on.

It was moved by Mr. E. BEADON, seconded by Mr. PINCHARD, and *resolved unanimously*,—

That previously to the convening of such Vestry, the proceedings at this Meeting, and a summary of Messrs. Carver and Giles's Report be printed and circulated for the information of the Parishioners and the Public, under the direction of the Vicar and Churchwardens.

The Churchwardens announced their intention to convene such Vestry Meeting.

HENRY PARR,

Chairman.

Subscriptions in aid of a proposed rate have been promised by the Right Hon. Lord Portman, Lord Lieutenant; the Right Hon. Lord Ashburton, Impropriator; the Ven. the Archdeacons of Taunton and Bath; F. H. Dickenson, Esq.; and other influential gentlemen in the county. Further subscriptions are requested, which will be received by the Vicar, by either of the Churchwardens, and at the different Banks in Taunton.

SUMMARY OF THE REPORT.

IN brief my report is, that the Tower is in a very bad state. That the evils affecting it have not been produced by one great radical defect, but rather by a number of causes operating in various ways.

The Foundations appear to be solid and secure, and the walls, (though not so massive as in some other instances,) are of considerable thickness. And yet many of the present evils must have manifested themselves shortly after the completion of the building.

The chief of them is the want of sufficient strength in the great arches supporting the Eastern and Western walls, from the absence of proper relieving arches over them. This deficiency has at an early period produced vertical fractures in the superimposed walls, extending to nearly half their height, and in spite of all the remedies yet applied (in the shape of iron tie bars and cramps,) these settlements have extended, until large portions of the walls are almost ruinous.

The mode by which I propose to remedy this evil, is by inserting even now, proper relieving arches, and then restoring the walls above to a sound condition.

The second great cause of mischief seems to be, the defective construction of the masonry of the walls behind the ashlared fronts. Almost every where, large flints and stones are built in without regard to their position, and without any secure bond; hence vertical joints are seen with scarcely a break, often six or seven feet in height, the result has been, that every tendency to settlements, or unequal pressure, has shewn itself by long vertical fissures opening. Fortunately the excellency of the mortar, has served to retard their extension.

The whole Tower is faced on its exterior with dressed stones laid in courses; hence the fractures seen on the interior surfaces do not correspond with similar ones on the outside; in each case they generally follow the joints of the

masonry, which is (as I have said) different in kind ; nearly all the larger cracks do however extend quite through the walls, producing loose work inside, and bursting out the surfaces of dressed stone on the exterior.

By inserting long bond stones across these fractures, as high up as they can be traced; by bonding the walls to each other at all the interior angles ; and by the iron plates proposed to be used as bonds, the walls will I believe be far better calculated to resist pressure than when they were erected.

A third great cause of evil, has been the decay of the sand stone, with which the plain faces of the exterior of the Tower were built. This stone is evidently quarried not far from the town, probably at Norton or Bradford, and forms one variety of the "new red sand stone group." It seems generally to have been well selected, and is very hard and compact where not decayed. It is at the angles and buttresses, that the decomposition has become so serious, and wherever the stone has been exposed on more than one side to the action of the weather. All these exposed parts must be re-built with the more durable stone from the Hamden Hill quarries. This latter material is that with which all the ornamental features of the Tower are constructed, including the parapet and pinnacles, the windows, string courses, arches, &c. It belongs to the class of "inferior oolites," and ranks high as material for building. The quarries were worked by the Romans, at a very early period. There is a great difference in the quality of the beds. The best stone being whiter and more expensive to work from its hardness and closer texture. This has led to the use of the inferior stone in great quantity, until an opinion has prevailed that the better beds were exhausted. It is certain however, that excellent stone can yet be obtained by paying a rather higher price for it. In St. Mary's Tower, there is a large amount of good stone little injured by the wear of 350 years. Unless laid in its bed, that is, with the grain or strata of the stone horizontally as dug from the quarry, it however will not endure either weather or vertical pressure long, and the decay of the Ham Hill stone work throughout the Tower, is limited by the extent to which it has been used with a vertical bed. Unfortunately nearly all the prominent features have suffered from this cause. The jambs of the windows are generally

sound, while the parapet though renewed in portions at least more than once, is now again ruinous. In the restoration of these parts wherever practicable, the stone must be used in its bed, or decay will again speedily commence. These are the principal causes which have reduced this magnificent building to so lamentable a condition. And when we consider that it contains 8 bells suspended at a height of 90 feetfrom the ground, which with their framing, altogether are nearly equivalent to a weight of 15 tons,* and that this ponderous mass is so often set in violent motion, we shall be only surprised that greater evils have not ensued. The bell ringing has no doubt increased the defects alluded to. I am inclined to believe that the Tower will be quite qualified to resist this strain when strengthened by the modes proposed.

Another source of mischief has been the fall of water from the roof to the ground, on the north side; much of the decay on this side of the building, is to be attributed to this cause, and when any restoration takes place, the water must be conveyed down by a proper pipe fixed within the Tower.

Having thus laid before you the result of the investigation undertaken at your request, I have little further to add. We have undertaken the, in some respects not pleasant duty, of making the public fully acquainted with the decay of a very noble edifice. It does not perhaps form a part of our commission to dwell on its great merits. Well known throughout England as the Tower of St. Mary Magdalene in Taunton, is, any eulogies would be superfluous.

The duty of those to whom the task of reparation shall be confided, must be limited to one object. The restoration of every feature and moulding to as good a condition as that in which its original builder left it. Old stones should not be re-cut to make them look like new. Lichens and moss are more picturesque than new ashlar. Where necessary the old work must be cut out, and new inserted, and if for a time the Tower wears rather a party coloured aspect, it will be preferable to that of one uniform smartness, and will soon tone down to an agreeable hue again.

On the succeeding sheet will be found a list of the por-

*I cannot answer for the strict accuracy of this weight, the bells not being all marked.

tions of the building already lost, or in danger at present of falling; and also an estimate of the cost of the entire restoration. It should be added that the work may be undertaken in two portions and may be spread over a few years. If the sum of £1800 can be raised during a term of a year and a half, the work can be commenced, and many of the more serious evils arrested, and by the expiration of this term a further sum would perhaps be found. I believe that the upper stages can be restored by a scaffolding built out from the windows, and this will prevent the serious inconvenience which a permanent frame work raised from the ground would cause.

Interruption would of course ensue to the bell ringing, but not to the church services.

I am, Gentlemen,

Yours very faithfully,

CHARLES EDMUND GILES,

(for Carver and Giles.)

To the Vicar and
Churchwardens of the
Parish of St. Mary Magdalene, Taunton.

Portions of the Tower which have either fallen, or have been removed for safety at different times.

Three of the large pinnacles in the middle of the parapets on either side. Portions of the third are lost, and when the whole has fallen, all authority for the restoration of this feature will have perished.

Two of the small overhanging pinnacles at the angles of the parapet have been more than half removed, and the two remaining are on the eve of falling.

All the gurgoyles which were excellently carved, are almost obliterated, fragments only remaining.

Many portions of the large pinnacles and of the parapet are lost.

The whole of the battlements and pinnacles of the stair turret have fallen, and only a few fragments remain on the roof inside, or at the edge overhanging.

Nearly all the small pinnacles on the faces of the buttresses have perished.

The richly carved niches are so much decayed, that in a short time their restoration will be only conjectural.

All the carved angels and heads amounting to more than a hundred, will soon retain no traces of their original design.

Portions of the Tower which are at the present time in danger of falling.

Portions of the battlements of the stair turret, weighing more than 2 cwt. are in imminent danger, being quite detached and overhanging the wall.

At the north eastern angle of the parapet, the small pinnacle projecting from the larger one, and overhanging the north aisle, rests entirely on a very decayed and dangerous gurgoyle. This pinnacle weighs probably nearly 10 cwt. and is disjointed, crooked, and at its centre shattered so much, as to render it extremely dangerous.

The great pinnacle at the north eastern angle of the parapet is falling apart. The finial is splitting asunder, and many fragments are likely soon to be precipitated on the roof of the church.

At the south eastern angle of the parapet, the small pinnacle is in a dangerous state, and portions of the great pinnacle are quite loose.

At the south western angle of the parapet, the small pinnacle is quite unsafe, and several cwt. of stone may fall at any time. A stone weighing about eight or nine pounds has fallen, and has been caught by the projecting neck of the decayed gurgoyle, where it is just balanced, and overhangs the corner at which the school children play between school hours.

The great pinnacle at this corner has also many very dangerous portions.

The great pinnacle and the small overhanging one at the north western corner, are in a similar condition with the preceding.

The pinnacle in the centre of the parapet on the north side has portions quite loose which would fall at a touch, the small shaft in connection with it, depends for support on the legs of the gurgoyle, which are worn away and reduced to the diameter of an inch.

All the great pinnacles surmounting the buttress are dangerous. Four of them are in a frightful state and will fall before long, they weigh more than 10 cwt. and two would fall on the church.

The buttresses on the north side of the west front is undermined and separating from the wall. A great portion now rests on about eight inches of masonry much decayed. Above two tons of masonry will probably slip at once when this stone gives way.

There are many hundreds of smaller features and fragments of stone, scattered over the entire surface of the Tower in a falling condition, and on the west front are several iron cramps and ties, weighing about 15 lbs. each, which must fall soon, one is particularly threatening, and one has lately fallen weighing 9 or 10 lbs.

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Restoring the exterior faces of the Tower wherever requisite with sand stone, and including pointing, and all masonry of every description necessary for the works proposed to be executed in the accompanying Report, as "restoration of fractures and settlements," and for "strengthening and binding the interior angles," &c.	372	3	4
All Iron work of every description necessary for bond plate or for stays, &c. - -	71	13	2
Relaying the Lead work on the roof with the gutters, &c. - - - - - - -	42	10	0
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May 3rd, 1852.

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